Electric energy generating device and electric energy generating method

technical field

The present invention derives from theories linked to the concepts of space charge, vacuum polarization and virtual particles, and involves the spontaneous formation of an electron cloud around a heated cathode in vacuum.

Background technique

The physical theory underlying the invention was published by the inventors of Researchgate in January 2019 (www.researchgate.net/publication/330601653-E-Cat_SK_and_long_range_particle_interactions), implemented by an entropy pump. Here, according to the zero-point energy predicted by the Heisenberg uncertainty principle, when the dV increases under dV/dt, the electronic vibration (Zitterbewegung) is active, resulting in the Aharanov-Bohm (Aharonov Bohm) effect, The phase of the electrons changes to form electron clusters with the same phase, the entropy, heat capacity, and degree of freedom become smaller, and the energy moves to the electrons with inconsistent phases, and the energy increases.

Although vacuum tube technology has been known and widely used since its infancy, there is no well-defined theory for the space charge effect since it is considered that the formation of a stable space charge can be prevented by the Coulomb force between electrons. However, as a consequence of the quantum fluctuations predicted by Heisenberg's uncertainty principle, it was found experimentally that the repulsive force can be shielded by the polarization of the vacuum produced by the creation-annihilation of virtual charge pairs.

Such particle-antiparticle pairs have a lifetime inversely proportional to their mass-energy, but during their brief existence they can act as charges on the solid dielectric of a capacitor, shielding the electric field and lowering the voltage required to accumulate charge on the capacitor plates.

prior art literature

patent documents

[Patent Document 1] Specification of US Patent No. 9115913

[Patent Document 2] Specification of US Patent No. 6465965

[Patent Document 3] Specification of US Patent No. 9502202

[Patent Document 4] Specification of US Patent No. 5,502,354

[Patent Document 5] Specification of US Patent No. 7379286

[Patent Document 6] Specification of US Patent No. 9306527

[Patent Document 7] Specification of US Patent No. 3670494

non-patent literature

【非专利文献1】Aharonov Y.and Bohm D.Significance of ElectromagneticPotentials in the Quantum Theory,Physical Review,115:485-491,1959

[Non-Patent Document 2] Hestenes D. Zitterbewegung Modeling, Foundations of Physics, 23(3):365-387, 1993

[Non-Patent Document 3] Dirac PAM Nobel lecture, Theory of Electrons and Positrons, Nobel Lectures, Physics 1922-1941, 1965

[Non-Patent Document 4] Feynman RPQED: The Strange Theory of Light and Matter, Penguin Books, Penguin 1990

【Elementary Particles, and Nuclear Interactions, Giorgio Vassallo et al

[Non-Patent Document 6] Andrea Rossi: Ecat SK and long range particleteractions, [online], January 2019, ResearchGate, [retrieved on June 8, 2021], URL:

www.researchgate.net/publication/330601653_E-Cat_SK_and_long_range_particle_interactio ns

Contents of the invention

[Problem to be solved by the invention]

Although the high density of allowed energy states in vacuum facilitates the generation of the above virtual particles, in general metal conductors, the generation of the above virtual particles is hindered due to the relatively small number of allowed states. This difference can be exploited to produce highly efficient electrical energy generating devices, which is the object of the present invention. This energy is generated by converting photon-derived plasma into electrical energy by forming walls in a layered hollow solid made of alloys of gallium, indium, arsenic, phosphorus, germanium, gold, and bismuth. So far, no one has successfully realized and used an electric energy generating device based on the concept of space charge. The device of the present invention is the first to deal with the problem of using space charge.

The device of the present invention is completely different from the conventional electrical, optical, and thermal energy generators described in Patent Documents 1 to 7, and achieves higher efficiency as will be shown by experiments described later.

[means used to solve the problem]

According to various embodiments of the present invention, the following content is provided:

[1] An electric energy generating device formed of metal or quartz containing a conductor, connected to a power source for driving an electron gun made of a tungsten-hafnium alloy, and having a conductive hollow formed by providing a grid on the electron gun shell is formed where,

When the electrons hit the target on the opposite side, the magnet moves the electrons in a straight line towards the target, the housing is grounded until the hollow is saturated, at saturation the MOSFET blocks the electrons from moving towards the ground, the diode directs the electrons to the capacitor, and from The capacitor guides the load.

[2] The power generating device according to [1], wherein the MOSFET is operated by an NPN transistor disposed between two resistors, and power is supplied by a frequency generator.

[3] In the electric energy generating device according to [2], one resistor is arranged between the DC energy source and the NPN transistor, and the other resistor is arranged between the connection point of the NPN transistor and the frequency generator between.

[4] The electric energy generating device according to [2] or [3], wherein a DC current source is disposed between the MOSFET and the NPN transistor.

[5] The electric energy generating device according to any one of [1] to [4], wherein the MOSFET generates a phase in which the electrons move to the ground terminal and a phase in which the electrons move to the load alternately repeats desired frequency.

[6] According to the electric energy generating device described in any one of [1] to [5], the vacuum pump makes the inside of the housing into a vacuum through the valve, and the vacuum contains argon or other gases and metals, and the housing is filled with A certain degree of vacuum is sealed.

[7] The electric energy generating device according to any one of [1] to [6], wherein the electron gun is supplied with power by a DC power source to obtain a voltage lower than that of a grounded line, and is supplied by a DC current source electricity.

[8] The electric energy generating device according to any one of [1] to [7], wherein a DC current flowing through the electron gun and the ground wire is modulated by a variable transformer.

[9] The electric energy generating device according to any one of [1] to [8], wherein the electron gun and the housing are electrically insulated by an electrical insulating material.

[10] The electric energy generating device according to any one of [1] to [9], wherein the casing is made of a double wall of a heat exchanger to recover heat radiated from the electric energy generating device.

[11] The electric energy generating device according to [10], wherein the heat exchanger uses a gas or liquid medium as a coolant.

[12] The electric energy generator according to any one of [1] to [11], wherein all the constituent elements and the power supply are grounded through the same common bus.

[13] The electric energy generating device according to any one of [1] to [12], wherein the electron gun is charged by a power source grounded through a DC line so as to be charged with respect to the cathode and the grid connected to the case. The voltage between the electrodes keeps the potential between the cathode and the ground terminal at a higher potential.

[14] The electric energy generating device according to any one of [1] to [13], wherein the capacitor has a voltage lower than the breakdown voltage of the MOSFET and higher than the total voltage of the case and the MOSFET. The capacitance of the capacitor.

[15] The electric energy generating device according to any one of [1] to [14], wherein selection of voltage, amperage, electrostatic capacitance, size, Tesla, and material depends on the output of the electric energy generating device.

[16] The power generating device according to any one of [1] to [15], the MOSFET is connected to an NPN transistor disposed between two resistors so that a signal from the frequency generator is accurately maintained At values where the MOSFET must function, a DC source is arranged between the NPN transistor and the frequency generator and another DC source is arranged between the MOSFET and the ground.

[17] The electric energy generating device according to any one of [1] to [16], wherein the MOSFET and the NPN transistor are cooled by a radiator and a fan.

[18] The electric energy generating device according to any one of [1] to [17], the resistor polarizes the NPN transistor, the resistor polarizes the Zener diode, and when the NPN transistor is disturbed, the resistor polarizes the MOSFET. The gate is +20V with respect to the source, and the resistor limits the current flowing to the optocoupler's LED.

[19] The electric energy generating device according to any one of [1] to [18], the capacitor accumulates electrons to be sent to the load, the capacitor lowers the impedance of the Zener diode, the capacitor is used for bypassing the 24V battery, A capacitor is connected to the optocoupler, and the capacitor is used to bypass the cathode.

[20] The electric energy generating device according to any one of [1] to [19], comprising a Zener diode configured to cause the The current flows backwards.

[21] The electric energy generating device according to [20], wherein the diode guides the current to the capacitor when the voltage is reached.

[22] The electric energy generating device according to [20], wherein the photocoupler isolates the frequency generator from the switching circuit.

[23] The electric energy generating device according to [20], the NPN transistor handles the current flowing to the SiC-MOSFET.

[24] The electric energy generating device according to [20], the SiC-MOSFET regulates the alternate cycle of the process so that the current can flow to the ground terminal or flow into the case.

[25] According to any one of [1] to [24], the plasma is arranged on the inner wall of the reactor in a layered form, and its composition is: Au, Ga, In, P, Ge, As, Surrounded by alloy formed by Bi.

[26] According to the electric energy generating device described in any one of [1] to [25], the artificial intelligence device optimizes V, A, W in time based on the fact that the power increases exponentially with the square of the ampere when the ampere is increased ratio between.

[27] The electric energy generating device according to any one of [1] to [26], wherein the plasma reactor is housed inside a heat exchanger that recovers thermal energy generated by the plasma.

[28] The electric energy generating device according to any one of [1] to [27], wherein oscillation is obtained by an RLC circuit arranged in series with an inductor and a capacitor using negative resistance generated by plasma.

[29] The electric energy generating device according to any one of [1] to [28], the artificial intelligence system instructs the device by utilizing a method in which electric power increases exponentially when the amperage is increased.

[30] The electric energy generating device according to any one of [1] to [29] can be combined with an LED lamp that obtains higher lighting efficiency than any existing lamp.

[31] The electric energy generating device according to any one of [1] to [26], which can use residual light inside the device and transmit it to a desired place with very high efficiency using an optical fiber.

[32] The electric energy generating device according to any one of [1] to [31], which can be used to charge the battery of the electric vehicle while the electric vehicle is running, to improve autonomy, and to adjust the voltage of the electric power generated by power generation to The voltage of the car battery module.

[33] A method of generating electric power using a device formed of metal or quartz containing a conductor, connected to a power source for driving an electron gun made of a tungsten-hafnium alloy, and formed by providing a grid on the electron gun A conductive hollow shell is formed, the method comprising:

When the electrons hit the target on the opposite side, the magnet moves the electrons in a straight line towards the target, the housing is grounded until the hollow is saturated, at saturation the MOSFET blocks the electrons from moving towards the ground, the diode directs the electrons to the capacitor, and from The capacitor guides the load.

[34] According to the method described in [33], generating virtual particles that form electron clouds around a cathode heated in space charge, vacuum polarization, and vacuum.

[35] According to the method described in any one of [33] to [34], starting from the "zero-point energy", by enhancing the chattering of the electrons and the dV/dT ratio of the Aharanov-Bohm effect Generate high dV, change the phase of electrons, configure them in clusters with phase coherence, generate lower entropy, lower heat capacity and fewer degrees of freedom, and transfer excess energy to non-phase coherent electrons, resulting in Excess photons are emitted.

Description of drawings

FIG. 1 is a circuit diagram showing one embodiment of the present invention.

FIG. 2 is a circuit diagram showing an embodiment of the present invention.

detailed description

The device of the present invention generates electrical energy according to the following theory. That is, the space charge in the vacuum, through the formation of virtual particles of matter and antimatter, shields the repulsion between electrons during its lifetime, which is inversely proportional to its mass-energy, and is therefore sufficient to obtain the shielding effect, reducing the required charge accumulation on the capacitor plate Voltage, thus generating macroscopic voltage and energy. Electrical energy is generated on the walls of the enclosure as the gas of electrons is generated as a result of quantum fluctuations predicted by the Heisenberg uncertainty principle, long-distance electrostatic shielding of the vacuum polarization produced by the creation-annihilation of virtual charge pairs . Therefore, according to

the zero-point energy predicted by Heisenberg's uncertainty principle, dV/dt increases the vibration of electrons and the Aharanov-Bohm effect, and the phase of electrons changes to form electron clusters with consistent phases. Entropy, The heat capacity and degrees of freedom become smaller, the energy moves to electrons whose phases are inconsistent, and the emission of photons increases.

The device of the present invention is formed by a shell made of conductive material, or a quartz tube containing a conductor inside, and is not particularly limited, for example, a hollow cylinder, a hollow regular hexahedron, a parallelepiped, and other hollow form etc.

For example, a magnet is provided on the top of one end of the cylinder, and an electron gun is arranged on the opposite side of the cathode. Between the cathode and the anode, gases such as argon or xenon and metal exist in a vacuum atmosphere to maintain a plasma state. Alternatively, the cylinder may be formed of quartz containing a conductor.

The cathode of the electron gun is equipped with a grid. In order to avoid the repulsion of electrons, the electrons are kept in the hollow of the cylinder, and the magnetic field generated by the magnet is linearly directed to the opposite end.

The electron gun is charged by a power source grounded through a DC line so that the potential between the cathode and the ground is higher than the potential between the grid connected to the conductive case and the cathode.

The voltage is not particularly limited, and can be adjusted with a variable transformer according to the power of the system.

MOSFET (metal-oxide-semiconductor field-effect transistor; Metal-Oxide-Semiconductor Field-Effect Transistor) prevents electrons from moving toward the load in the circuit for a millionth of a second to a few millionths of a second; and when After electrons fill the cylinder's shell, the MOSFET opens the circuit to ground and closes the circuit to the load.

A diode is present in the path to the load to only pass electrons above the threshold voltage. Next, the electrons reach the capacitor, which emits electrons toward the load. The second cycle, like the first, occurs between a millionth of a second and a few millionths of a second.

The MOSFET is controlled by an NPN transistor and charged by a frequency generator that controls the frequency at 1-3MHz. The NPN transistor is configured between a 1000 ohm, 1V resistor and a 100 ohm, 7V resistor. The first resistor is configured between the NPN transistor and the frequency generator, and the second resistor is configured between the NPN transistor and the 24V battery. A 4V battery is placed between the NPN transistor and the other end of the MOSFET. In fact, since the frequency generator cannot provide the current with the required characteristics of the MOSFET-switch, in order to correctly control the MOSFET-switch under high voltage, it is necessary to amplify the signal of the frequency generator and connect the emitter to the NPN transistor. To operate, a voltage change from 20V at full conduction to -4V at complete blockage is required. The MOSFET-switch has an input impedance of 200pF and is almost purely capacitive.

In order to limit the base current of the NPN transistor, the circuit of the NPN transistor is completed with a 1000 ohm resistor. When the signal of the frequency generator is about 10V, when a current of about 9.4mA flows through the base of the NPN transistor, the NPN transistor is turned on (saturated state), and the collector connected to the gate of the MOSFET is almost grounded; due to VCE (sat)

becomes 1V in tens of minutes, therefore, the MOSFET is cut off. When the frequency generator signal is 0V or -1 to -2V, the NPN transistor is not turned on, and the 100Ω resistor makes the gate of the MOSFET quickly reach 20V.

get＝R×C

Wherein, R=100 ohms (Ω), C=200pF.

The capacitor must be kept at a voltage as low as the breakdown voltage of the MOSFET, and its capacitance must be greater than the total capacitance of the conductive case and the MOSFET.

The interior of the electrically conductive enclosure is evacuated to a high vacuum before operation begins unless the enclosure remains sealed under a certain vacuum.

An insulated double wall heat exchanger recovers the heat dissipated by the system. Such heat exchangers can use gaseous or liquid media as coolant.

When a suitable vacuum degree is reached, the vacuum degree is increased, and gas such as argon is forcibly injected until the vacuum degree reaches a predetermined degree, and the casing can be sealed at this time.

All power sources and system elements of the power generating device are connected to the common ground.

The Ga-In-P-As-Ge-Au-Bi alloy is arranged in layers along the inner wall of the reactor around the plasma generated between the cathode and the anode.

The action of the power generating device is controlled by an artificial intelligence system, and the ratio of amperes, volts, watts is based on the Ohm's equation, ie power increases quadratically as amperes increase.

I＝A^2×R

An important application example is the combination of such an electrical energy generating device with LED lamps. In the experiment, 4 watts of power supplied from the grid to the power generating device reached 200,000 lumens. This is also very significant in light of the fact that lighting takes away 58% of the electrical energy generated worldwide.

In addition, this electric energy generator can also be used for charging the battery of an electric vehicle. Powering the battery while an EV is in motion can greatly increase the autonomy of the vehicle. At this time, the voltage of the generated electricity is made to match the voltage (usually 3.7V) of the battery module.

An embodiment of the invention is shown in FIG. 1 . Its constituent elements are as follows.

1- Vacuum chamber made of tungsten and hafnium alloy with cathode and anode

2- Shell made of conductive metal (sealed under a certain degree of vacuum)

3-Vacuum pump valve

4-magnet

5- DC power supply between electron gun and grid

6- DC power supply between electron gun and ground terminal (V6>V5)

7- Variable Transformer (Variac: Voltage Regulator)

8-Power

9- Diode

10-capacitor

11-load

12-MOSFET/switch

13-Radiator+Fan

14-battery

15-battery

16-NPN transistor

17-resistor

18 - BNC connector for frequency generator

19 - frequency generator

20- Ground Bus

21 - insulator

22-resistor

23-vacuum pump

24-AC power outlet

25-Gate

26 - heat exchanger

27 - transformer

28-zener diode

29-Optocoupler

30-electron gun

31-Oscilloscope

32-Fresnel lens

33-Using alloys of gallium, indium, phosphorus, arsenic, germanium, gold, bismuth to form a layered fence around the plasma

34 - layer of alloy described in symbol 33

The values and characteristics of the above components can be appropriately changed according to the power of the system, the type of conductive metal of the case, the alloy of the layer on the inner wall of the case, etc., without impairing the effectiveness of the present invention.

[Example]

A series of experiments were conducted with the same settings as those of the embodiment shown in FIGS. 1 and 2 and those described in this specification.

It was found that there was an increase in energy due to the lower impedance caused by the high vacuum, and the resulting space charge. In addition, when the residual light from the electric energy generator was measured, it was found that the residual light is suitable for being diffused anywhere through the optical fiber.

The experiments were carried out at Leonardo's research institutes in Miami Beach, Florida (USA) and Rome (Italy).

In the embodiment shown in FIGS. 1 and 2 , in addition to the numerals described in the drawings, the following symbols will be described below.

About Figure 1

R1 is a 1kW resistive load.

R2 polarized NPN transistor, 820 Ohm 1/2W.

R3 polarizes Zener diode Z1, 4.7V, 10W.

R4 is 100 ohms, 7W, making the gate of the MOSFET +20V relative to the source when T1 is blocked.

R5 is 820 ohms, 1W, and limits the current flowing through the optocoupler's internal LED.

RTEST is 1 ohm, 1/2W, monitor the drain current of MOSFET through an oscilloscope.

Capacitors are all ceramic:

C1 is a 0.15nF 1700V capacitor.

C2 is a 100nF 50V capacitor, which is used to reduce the operating impedance of the Zener diode and reduce noise.

C3 is a 100nF capacitor for 24V battery bypass.

C4 is a 100nF capacitor with the low voltage required by the optocoupler. Connected near the connectors 4 and 6 of the photocoupler.

C5 is a 50nF capacitor with low voltage for cathode bypass.

Z1 is a zener diode which allows current to flow in reverse when the voltage is reached.

D1 is a high voltage, high speed diode.

U1 is a Siglent optocoupler used in the isolation switch circuit.

T1 is an NPN transistor.

T2 is a SiC-MOSFET, which is a switch that alternately switches the two modes of the system.

PH is a semiconductor chip.

AI is artificial intelligence that balances A/V ratio and power.

HX is a heat exchanger used to recover the heat of plasma irradiation.

L is an alloy layer of Au, Ge, P, Ga, In, As, and Bi.

The switching circuit as a whole is sufficiently insulated from collective ground.

Connection 2 shown on the battery is the positive terminal.

The frequency generator (Siglent) is adjusted to: output square wave +5V HI 0V LOW, 50% duty cycle, and the frequency is 1 to 5MHz.

Each transistor is fully isolated from the heat sink.

About Figure 2

In Figure 2, the anode is connected to the inductor. By concentrating the released electrons between the cathode and the anode, the negative resistance of the plasma is used to generate RLC vibration in the circuit through a series of capacitors and inductors.

The constituent elements of the circuit diagrams shown in FIGS. 1 and 2 can be changed appropriately by those skilled in the art as long as they operate according to the same principle.