[Document Name]Description

[Title of the invention]The electric energy generating apparatus and an energy generating method

[Technical field]

[0001]The present invention derives from the theory associated with the concept of space charge, vacuum polarization and virtual particles and is related to the spontaneous formation of electron clouds around the cathode heated in vacuum.

[Background of the invention]

[0002]The physics theory on the basis of the present invention is published by the inventor by the inventor of search gate in January 2019 (
www.researchgate.net/publication/330601653_E
Cat_SK_and_long_range_particle_interactions) and is realized by an entropy pump.
Here, the 0 point energy predicted on the basis of the uncertainty principle of High-Senberg becomes higher in the case of dV / dt, and the *********** of electrons becomes active. A ******** effect occurs, and a phase of electrons is changed, a cluster of electrons having a uniform phase is formed, and an entropy, a heat capacity, and a degree of freedom are reduced, and energy is transferred to electrons whose phases are not uniform and energy is increased.

[0003]Although it is well known and utilized from the beginning of vacuum tube technology, the space charge effect does not have a well-defined theory since it is believed that the formation of a stable space charge is prevented by Coulomb forces between electrons. However, it has been found experimentally that a repulsive force can be screened by the vacuum polarization induced by the formation annihilation of virtual charge pairs as a result of the quantum fluctuations predicted by the uncertainty principle.

[0004]While the lifetime of such particle-anti-particle pairs is inversely proportional to their mass-energy, it is possible, during their short duration, to reduce the charge of the solid dielectric of the capacitor and to reduce the voltage required to block the electric field and accumulate charges on the plate of the capacitor.

[Prior art documents]

[Patent document]

[0005]

[Patent document 1]The description of US Patent No. 9115913

[Patent document 2]The description of US Patent No. 6465965

[Patent document 3]The description of US Patent No. 9502202

[Patent document 4]The description of US Patent No. 5502354

[Patent document 5]The description of US Patent No. 7379286

[Patent document 6]The description of US Patent No. 9306527

[Patent document 7]The description of US Patent No. 3670494

[Non-patent document]

[0006]

[Non-patent document 1]Aharonov Y. and Bohm D. Significance of Electromagnetic Potentials 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 P.A.M. Nobel lecture, Theory of Electrons and Positrons, NobelLectures, Physics 1922-1941, 1965

[Non-patent document 4]Feynman R.P. QED: The Strange Theory of Light and Matter, Penguin Books, Penguin 1990

[Non-patent document 5]Giorgio Vassallo et Al. : Maxwell – Dirac Theory and Occam's Razor: Unified Field, Elementary Particles, andNuclear Interactions, Amazon 2019

[Non-patent document 6]Andrea Rossi , " Ecat SK and longrange particle nteractions ", "online", January 2019, ResearchGate , "Search for Reiwa 3(2021) June 8", Internet & lt ; URL:www. researchgate. net/publication/330601653_E & lt ; Cat_SK_and_long_range_particle_interactions & gt ;.

[Summary of the invention]

[Problem to be solved by the invention]

[0007]While the generation of the virtual particles is advantageous due to the high density of acceptable energy states in vacuum, a conventional metal conductor is hampered by the relatively small number of acceptable conditions. It is an object of the present invention to provide a high efficiency electrical energy generator which utilizes this difference. Such energy is created by the fact that the plasma from which photons are obtained is converted into electrical energy by walls in a hollow solid layered with an alloy of gallium, indium, arsenic, phosphorus, germanium, gold, and bismuth. To realize an electric energy generator based on the concept of space charge, and to operate it, it has not been successful until now, and the device of the present invention is first adapted to the problem of operating space charge.

[0008]The device of the present invention is quite different from existing electrical, optical, and heat energy generating devices as described in Patent Documents 1 to 7, and as apparent from experiments described later, higher efficiency is obtained.

[Means for solving the problem]

[0009]In accordance with one aspect of the invention, there is provided an electrical energy generator comprising : [1] a metal or quartz comprising a conductor, and a power source for driving an electron gun made of a tungsten hafnium alloy, and wherein a grid is provided on the electric gun. The electrons strike the opposite target and the magnets run linearly toward the target. The device of claim 1, wherein the housing is grounded until the hollow is saturated, and when saturated, the MOSFET inhibits the electrons from being directed to ground and the diode directs the electrons from the capacitor to the load. [2] The electrical energy generator according to [1], wherein the MOSFET is steered by an NPN transistor disposed between 2 resistors and is powered by a frequency generator. [3] The electrical energy generator according to [2], wherein a resistor is disposed between the DC energy source and the NPN transistor, and the other resistor is disposed between the NPN transistor and the frequency generator. [4] The electric energy generator according to [2] or [3], wherein the DC current source is disposed between the MOSFET and the NPN transistor. [5] The electric energy generator according to any one of [1] to [4], wherein the MOSFET generates a frequency necessary for alternately repeating a phase in which the electrons go toward the ground and a phase in which the electrons move toward the load. An electrical energy generator according to any of claims 1 to 5, wherein the vacuum pump causes a vacuum in the housing via a valve and contains argon or other gas and metal in the vacuum and the housing is sealed at a constant vacuum level. 6. [7] The electrical energy generator according to any one of [1] to [6], wherein the electron gun is powered by a DC power supply at a voltage lower than a voltage of a line connected to ground and supplied by a DC current source. [8] The electric energy generator according to any one of [1] to [7], wherein the DC current flowing through the electron gun and the ground line is modulated by a variable transformer. [9] The electric energy generating device according to any one of [1] to [8], wherein the space between the electron gun and the housing is electrically insulated by an electrically insulating material. [10] The electric energy generator according to any one of [1] to [9], wherein the housing is double-walled by a heat exchanger in order to recover heat dissipated from the electric energy generator. [11] The electric energy generator 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 of the components and the power source are connected to ground by the same omnibus. [13] The electric energy generator according to any one of [1] to [12], wherein the electron gun is charged by a power source grounded via a DC line to maintain a high potential between a cathode and a ground with respect to a voltage between a cathode and the grid connected to the housing. [14] The electric energy generator according to any one of [1] to [13], wherein the capacitor has a voltage equal to or lower than a breakdown voltage of the MOSFET and a capacitance higher than a capacitance obtained by combining the housing and the MOSFET. [15] The electrical energy generator according to any one of [1] to [14], wherein the selection of the voltage, amperage, capacitance, dimension, Tesla, material is dependent on the output of the electrical energy generator. [16] The MOSFET is connected to an NPN transistor arranged between 2 resistors, and a signal from the frequency generator is accurately maintained at a value at which the MOSFET must function. The electric energy generator according to any one of [1] to [15], wherein a DC source is disposed between the NPN transistor and the frequency generator, and another DC source is disposed between the MOSFET and the ground. [17] The electric energy generator according to any one of [1] to [16], wherein the MOSFET and the NPN transistor are cooled by a heat sink and a fan. [18] A resistor polarizes an NPN transistor, and a resistor polarizes a Zener diode. The electric energy generator according to any one of [1] to [17], wherein the resistor causes the gate of the MOSFET to be at a voltage of 20 V with respect to the source when the NPN transistor is interrupted, and the resistor limits the current to the LED of the

photocoupler. [19] The capacitor stores electrons to be sent to the load, and the capacitor lowers the impedance of the Zener diode. The electric energy generator according to any one of [1] to [18], wherein the capacitor is for bypassing a 24 v battery, the capacitor is connected to a photocoupler, and the capacitor is for bypassing the cathode. [20] The electric energy generator according to any one of [1] to [19], further comprising a Zener diode which reverses current when a voltage reaches between the housing and the MOSFET. [21] An electrical energy generator according to [20], wherein when a voltage is reached, a diode leads current to a capacitor. [22] The electric energy generator according to [20], wherein the photocoupler separates the frequency generator from the switch circuit. [23] The electrical energy generator according to [20], wherein the NPN transistor processes current to the SiC-MOSFET. [24] The electrical energy generator according to [20], wherein the SiC-MOSFET adjusts alternating cycles of the process to allow current to flow toward or into the ground. [25] The electric energy generator according to any one of [1] to [24], wherein the plasma is surrounded by an alloy consisting of a component : Au,Ga,In,P,Ge,As,Bi arranged in a layer on an inner wall of the reactor. [26] The electrical energy generator according to any one of [1] to [25], wherein the artificial intelligence device temporally optimizes the ratio between V, A, and W, based on the fact that an increase in amperage increases exponentially with power of ampere 2. [27] The electric energy generator according to any one of [1] to [26], wherein the plasma reactor is housed inside a heat exchanger which recovers heat energy generated by plasma. [28] The electric energy generating apparatus according to any one of [1] to [27], wherein the negative resistance generated by the plasma is utilized to obtain oscillation in an RLC circuit in which an inductor and a capacitor are arranged in series. [29] The electric energy generator according to any one of [1] to [28], wherein the artificial intelligence system instructs the apparatus in a manner that makes use of an exponential increase in power when the amperage increases. [30] The electric energy generator according to any one of [1] to [29], which can be combined with an LED lamp which obtains a higher lighting efficiency than an existing lamp of all kinds. [31] An electrical energy generator according to any one of [1] to [26], wherein the residual light in the device can be used to transfer it at a very high efficiency using an optical fiber at a required location. [32] The electric energy generator according to any one of [1] to [31], which can be used for charging a battery of an electric vehicle while the electric vehicle is running, enhancing autonomy, and adjusting a voltage of the generated electric power to a voltage of a module of a battery of an automobile. 33) A method of generating electrical energy using an apparatus made of a conductive hollow housing comprising a conductor, and connected to a power source for driving an electron gun made of a tungsten-hafnium alloy, wherein a grid is provided on the electric gun and a grid is provided on the electric gun ; and A method in which a magnet runs linearly toward a target, and wherein the housing is grounded until the hollow is saturated, and when saturated, the MOSFET prevents the electrons from being directed to ground and the diode directs the electrons from the capacitor to the load. [34] A method according to [33], wherein a space charge, a vacuum polarization, a virtual particle forming an electron cloud around a cathode heated in vacuum are generated. Beginning with "Point 0 Energy", a high dV is generated at a ratio of dV / dT which enhances the *********** and ******** effect of electrons, and the phase of electrons is changed to be placed in clusters with phase coherence to generate a lower entropy ; 35. A method according to any one of [33] to [34], wherein a lower heat capacity and a lesser degree of freedom are transmitted to electrons which are not phase coherent, resulting in an excessive photon emission.

[Brief description of the drawings]

[0010]

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

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

[Mode for carrying out the invention]

[0011]According to the present invention, electrical energy is generated by the following theory. That is, the space charge in vacuum, due to the formation of virtual particles of material and anti-material material, blocks the repulsion between electrons during their lifetime and is inversely proportional to their mass-energy, so that it is 10 minutes in order to obtain a shielding effect, reducing the voltage required to accumulate charges in the plate of the capacitor, resulting in a macroscopic voltage and energy. Electrical energy is generated in the walls of the housing because the gas of electrons is generated by the long distance electrostatic shielding resulting from the vacuum polarization caused by the generation and elimination of a virtual charge pair as a result of the quantum fluctuations predicted by the Sensenberg uncertainty principle. To this end, 0 point energy obtained from the principle of High Senberg uncertainty is started. The dV / dT increases the *********** and ******** effect, changes the phase of electrons, forms clusters of aligned electrons, and reduces entropy, heat capacity, and freedom of freedom, and transfers energy to electrons that are not in phase, thus increasing photon emission.

[0012]The device of the present invention is formed by a housing made of a conductive material or a quartz tube containing a conductor inside, and includes, but is not limited to, a hollow cylinder, a hollow positive 6 sided body, a parallel 6 sided body, another hollow form, and the like.

[0013]For example, a magnet is provided at an upper portion of one end of the cylinder, and an electron gun is disposed at an opposite side of the cathode. Between the cathode and the anode, gas such as argon or Xenon and metals are present under a vacuum atmosphere, and the plasma is maintained. Also, the cylinder may be formed of quartz containing a conductor.

[0014]A grid is provided at the cathode of the electron gun, and in order to avoid the repulsion of electrons, the electrons are held in the hollow of the cylinder and are guided linearly to one end of the opposite side by the magnetic field generated by the magnet. The electron gun is charged by a power supply that is grounded via a DC line such that a higher potential is between the cathode and the ground than between the grid and cathode connected to the conductive housing.

[0015]The voltage is not particularly limited, but may be adjusted by a variable transformer according to the power of the system.

[0016]MOSFET (metal-oxide- semiconductor field – effect transistor ; metal oxide semiconductor field effect transistor), During a 1 1000000 to a few 1000000 of 1 of a second, the electrons inhibit the circuit from advancing towards the load, and after the electrons fill the housing of the cylinder, the MOSFET opens the circuit to ground and closes the circuit to the load.

[0017]In the path to the load, there is a diode which allows electrons to pass only above the threshold voltage. Next, electrons reach the capacitor and the capacitor

emits electrons to the load. This 2 cycle is performed between 1 and 1 of seconds, similar to the 1 cycle, between 1000000 and 1000000 of seconds.

[0018]The MOSFET is steered by an NPN transistor and charged by a frequency generator controlling a frequency of 1 to 3 MHz. An NPN transistor is placed between a 1000 ohm, 1 v resistor and a 100 ohm, 7 v resistor. A 1 resistor is disposed between the NPN transistor and the frequency generator, and a 2 resistor is disposed between the NPN transistor and the 24 V battery. A 4 V battery is placed between the NPN transistor and the other end of the MOSFET. In fact, it is not possible for a frequency generator to supply a current with exactly the characteristics required for the MOSFET switch, so that the frequency generator is not capable of supplying a current. In order to correctly steer the MOSFET switch at high pressure, an emitter-common NPN transistor that amplifies the signal of the frequency generator is required, and in order to operate correctly, a pressure change of from 20 V at full conduction to - 4 V at full inhibition is required. The input impedance of the MOSFET switch is nearly pure capacitive with 200 pF.

[0019]The circuit of the NPN transistor is completed with a 1000 ohm resistor to limit the base current of the NPN transistor. When the signal of the frequency generator is about 10 V, if a current of about 9.4 mA flows through the base of the NPN transistor, the NPN transistor conducts (saturation state), and the collector connected to the gate of the MOSFET is substantially grounded, and the voltage VCE (sat) becomes 1 V, so that the MOSFET is shut off. When the signal of the frequency generator is 0 V or - 1 to - 2 V, the NPN transistor is not conducting, and a 100 Ω resistor causes the gate of the MOSFET to be rapidly 20 V.

[0020]R = 100 ohms (Ω), C = 200 pF

[0021]The capacitor must be maintained at a low voltage up to the breakdown voltage of the MOSFET, and its capacitance must be greater than the combined capacitance of the conductive housing and the MOSFET.

[0022]Before the start of the operation, the inside of the conductive housing is subjected to a high vacuum unless the housing is maintained in a sealed state at a constant vacuum.

[0023]The heat exchanger of the double wall insulated thermally collects the heat diffused by the system. Such a heat exchanger may use a gaseous or liquid medium as a coolant.

[0024]When an appropriate vacuum degree is reached, the vacuum degree is increased, and a gas such as argon is forcibly injected to a predetermined degree of vacuum, and at this time, the housing can be sealed.

[0025]All power source and electrical energy generator system components are connected to an omnibus ground.

[0026]An alloy of - In - P - As - Ge - Au - Bi is disposed in layers around the plasma generated between the cathode and the anode along the inner wall of the reactor.

[0027]The operation of this electrical energy generator is controlled by an artificial intelligence system, and the ratio of ampere, volts, and watt is based on an Ohm equation, in which the power is quadratically increased when an amperage is

increased by 2.

[0028]I = A ? 2 × R.

[0029]An important application is a combination of this electrical energy generator and an LED lamp. In experiments, 200000 lumens were reached with 4 watt of electrical energy supplied to the electrical energy generator from the grid. This is of great importance also from the fact that the illumination is deprived of 58% of the electrical energy generated worldwide.

[0030]It is also possible to use this electrical energy generator for charging a battery of an electric vehicle. To remarkably enhance autonomy of an automobile by supplying electricity to a battery while driving an electric vehicle. In that case, it is the voltage (usually 3.7) of the module of a battery about the voltage of the occurring electrical and electric equipment.
V) Double.

[0031]One embodiment of the present invention is shown in FIG. 1. The components are as follows :. A vacuum chamber 2 comprising 1- tungstic hafnium alloy cathodes and anodes, a housing 3 consisting of a conductive metallic material (sealed at a constant vacuum), a vacuum pump valve 4 – a magnet 5 – an electronic gun and a DC power supply 6 between the grid and the grid (V. sub. 6 & gt ; V. sub. 5). sub. 7. Variac (Variac) 8 – Power Source 9 Diode 10 – Capacitor 11 – Load 12 – MOSFET / Switch 13 – Heat Sink Fan 14 – Battery 15 – Battery 16 – NPN transistor 17 – Resistor 18 – Frequency generator BNC Connector 19 – Frequency generator 20 – Ground bus 21 – Insulator 22 – Resistor 23 Vacuum pump 24 – AC power outlet 25 – grid 26 – heat exchanger 27 – transformer 28 – Zener 29 – photocoupler 30 – electron gun 31 – oscilloscope 32 – Fresnel lens 33 – gallium Layer of alloy as described in the surrounding enclosure 34 – reference 33 of the plasma layered with an alloy of indium, phosphorus, arsenic, germanium, gold, bismuth ;

[0032]The values and characteristics of the components may be varied as appropriate, depending on the power of the system, the type of conductive metal of the housing, the alloy of the layer on the inner wall of the housing, and the like without impairing the effectiveness of the present invention.

[Examples]

[0033]A series of experiments were performed with the embodiment shown in FIGS. 1 and 2 and the same settings as described herein.

[0034]As a result, an increase in energy was observed due to the decrease in impedance due to high vacuum and the associated generation of space charges. Further, it has been found that, when the afterglow from the electric energy generator is measured, it is suitable for use by being diffused anywhere by an optical fiber.

[0035]This experiment was performed at the Kenonald laboratories of Miami Beach, Fla. (USA) and Roman (Italy).

[0036]In the embodiment shown in FIG. 1 and FIG. 2, in addition to the figures shown in the figures, the following codes will be described :.

[0037]For FIG. 1, R 1 is a resistive load of 1 kW. R 2 polarizes the NPN transistor. 820 ohm 1/2 WR 3 polarizes Zener Z 1. The 4.7V,10WR4 is 100 ohms, 7 W, and if T. sub.

1 is interrupted, the gates of the MOSFETs will be 20 V relative to the source. R 5 is 820 ohms, 1 W, limiting the current flowing through the LED inside the photocoupler. RTEST is 1 ohms 1/2 W and monitors the drain current of the MOSFET with an oscilloscope.

[0038]All of the capacitors are ceramic : C 1 is a 0.15nF 1700V capacitor. C 2 is a 100 nF 50 V capacitor to reduce the operational impedance of the Zener and reduce noise. C 3 is a 100 nF capacitor for bypassing a 24 V battery. C 4 is a 100 nF capacitor, which is a low voltage required by the photocoupler. Connected near the coupler connections 4 and 6. C 5 is a 50 nF capacitor and is a low voltage for bypassing the cathode.

[0039]Z 1 is a zener which causes current to travel in the opposite direction when a voltage is reached. D 1 is a high voltage, high speed diode. U 1 is a photocoupler for separating the ***** of the switch circuit. T 1 is an NPN transistor. T 2 is an SiC-MOSFET which is a switch which alternately switches the 2 modes of the system. A pH is a chip of a semiconductor. An AI is an artificial intelligence that balances A / V and power. HX is a heat exchanger that recovers heat emitted from a plasma. L is a layer of Au,Ge,P,Ga,In,As,Bi alloy.

[0040]The entire switch circuit is sufficiently insulated from the omnibus ground. A connecting portion 2 displayed on the battery is a positive electrode. The frequency generator (Sigrent : *****) is adjusted to output a square wave 5 V HI 0V LOW,50 % duty cycle, a frequency of 1 to 5 MHz. Each transistor is sufficiently separated from the heat sink.

[0041]Referring to FIG. 2, in FIG. 2, an anode and an inductor are connected to each other, and electrons emitted between the cathode and the anode are concentrated, whereby the negative resistance of the plasma is utilized to cause an RLC oscillation in a circuit using a series of capacitors and an inductor.

[0042]The components of the circuit diagram shown in FIGS. 1 and 2 can be modified as appropriate by those skilled in the art if operating on the same principle.

[0043]The English notation of the present application is shown in Table 1 below.

[0044]

[Table 1]

PATENT APPLICATION

TITLE OF THE INVENTION:

ELECTRIC ENERGY GENERATOR

NAME OF THE INVENTOR:

Andrea Rossi

WHAT THE INVENTION IS FOR

This patent derives from theories bound to the concept of space charge, vacuum polarization and
virtual particles and is related to the spontaneous formation of an electron cloud around a cathode
heated in a vacuum.
The physics theory at the base of this invention has been published by the inventor on Researchgate
in January 2019:
www.researchgate.net/publication/330601653_E-Cat_SK_and_long_range_particle_interactions
and is realized by an entropic pump, wherein point zero energy foreseen by the uncertainty principle
of Heisenberg subject to dV/dt with high dV causes increase of the Zitterbewegung of electrons and
the Aharonov-Bohm effect, that causes electrons phase change, that causes formation of clusters of
electrons in phase, that causes minor entropy, thermal capacity and freedom degrees, that causes
transfer of energy to electrons not in phase, causing gain of energy.
Although well known and exploited since the early years of vacuum tube technology, the space
charge effect has not a well defined theory, because the formation of a stable space charge is
supposed to be prevented by the Coulombian forces between electrons. But we discovered
experimentally that the repulsion force can be screened by a vacuum polarization generated by the
formation-annihilation of virtual charges pairs as a consequence of quantum fluctuations predicted
by Heisenberg uncertainty principle.
The lifetime of such particle-antiparticle couples is inversely proportional to their mass-energy, but
during their short existence may act as the charges in the solid dielectric of a capacitor that,
screening the electric field, lowers the voltage required to accumulate a charge in the capacitor
plates.
The creation of these virtual particles is favored by the high density of allowable energy states in
vacuum, while they are hindered by the relatively low number of permitted states in an ordinary
metallic conductor. This difference may be exploited to generate a high efficiency electric energy
generator and this is what this invention has been made for. Such energy is made by a plasma whose
gain in photons is turned into electric energy by walls inside the hollow solid hereunder described,
that is layered by alloys of Gallium, Indium, Arsenic, Phosphorus, Germanium, Gold and Bismuth.
Nobody has succeeded until today to realize and put in operation an electric energy generator based
on the concept of space charge and the apparatus of this invention responds to the task to make
operative the space charge for the first time.

WHICH IS THE DIFFERENCE BETWEEN THIS INVENTION AND THE EXISTING
TECHNOLOGIES

This apparatus is totally different from any existing electric energy generator of electricity, light and
heat and should have a higher efficiency, as we have shown in the experimens here reported.

PATENTS OF PRIOR ART TAKEN IN CONSIDERATION:

US 9,115,913 B1
US 6,465,965 B1
US 9502202 2016
US 5502354 1986
US 7379286 2008
US 9306527 2016
US 3670494 1972

REFERENCE OF PUBLICATIONS:

Aharonov Y. and Bohm D. Significance of Electromagnetic Potentials in the Quantum Theory, Physical Review, 115: 485-491. 1959

Hestenes D. Zitterbewegung Modeling, Foundations of Physics, 23(3): 365-387, 1993

Dirac P.A.M. Nobel lecture. Theory of Electrons and Positrons. Nobel Lectures, Physics 1922-1941, 1965

Feynman R.P. QED: The Strange Theory of Light and Matter. Penguin Books, Penguin 1990

Giorgio Vassallo et Al. : Maxwell-Dirac Theory and Occam's Razor: Unified Field. Elementary Particles, and Nuclear Interactions. Amazon 2019

Andrea Rossi: Ecat SK and long range particle nteractions
www.researchgate.net publication 330601653_E-Cat_SK_and_long_range_particle_interactions

DESCRIPTION OF THE INVENTION

The apparatus is made by an enclosure made by a conductive material. or a quartz tube internally containing electric conductors. for example. but not necessarily. a hollow cylinder. or a hollow cube or parallelepiped or other hollow forms.
This cylinder has a magnet seat upon one head and an electron gun put at the opposite end of a cathod. Between the cathod and the anod a plasma is maintained, in a vacuum atmosphere and in presence of gases like Argon, Xenon, or others and metals. The cylinder can also be made by quartz containing electric conductors.
Upon the electron gun's cathode is put a grid, to avoid a recoil of the electrons. that are retained inside the cylinder's hollow and are directed linearly toward the opposite end, due to the magnetic field generated by the magnet.
The electron gun is charged by a power source that is grounded through a DC line. to maintain a higher potential between the cathode and the ground than between the cathode and the grid, that is connected with the conductive enclosure.
The voltage can be also. but not necessarily, regulated by means of a variac. depending on the power of the system.

A mosfet transistor forbids the electrons to go in the circuit toward the load for 1 or several millionths of second. to allow the electrons to fill the enclosure of the cylinder, then the mosfet opens the circuit to the ground and closes the circuit to the load.
Along the path to the load there is a diode that allows electrons to pass only above a threshold

voltage, as it is described in the embodiment. The electrons then arrive to a capacitor that shoots them to the load; this second cycle has the same duration of the first one, which is between one and several millionths of seconds.

The mosfet is piloted by means of a pilot transistor, charged by a frequency generator that regulates the frequency between 1 and 3 MHz, wherein the pilot transistor is put between a 1000 Ohm, 1 V resistance and a 100 Ohm, 7 V resistance, the first put between the pilot and the frequency generator and the second between the pilot and a 24 V battery; between the pilot and the other end of the mosfet is put a 4 V battery: in fact, since the generator cannot be able to supply a current with exactly the characteristics necessary to the mosfet-switch, it is necessary the pilot transistor, connected as emitter in common, that amplifies the signal of the generator to correctly pilot the mosfet-switch at high tension, that necessitates, to work properly, of a tension swing from 20 V, at full conduction, to -4 V at full interdiction: the mosfet-switch has an input impedance that is almost purely capacitive at 200 pF.

The circuit of the pilot must be completed with a 1000 Ohms resistance to limit the base current of the pilot : when the signal of the generator is around 10 V, in the pilot base passes a current of about 9.4 mA, the pilot conducts (in saturation) and its collector, connected to the gate of the mosfet, is almost grounded, with vcesat at several tenths of Volt, therefore the mosfet is barred: when the signal of the generator is equal to 0 or between -1 and -2 V the pilot does not conduct and the 100 Ohms resistance brings rapidly the gate of the mosfet at 20 V:

tau = RC

wherein

R = 100 Ohm

C = 200 pF

The capacitor has to be maintained at a lesser voltage, limited to the breakdown voltage of the mosfet, while its capacitance must be greater than the capacitance of the conducting enclosure and mosfet combined.

Before the start of the operation a high vacuum is made inside the conductive enclosure, unless the closure is maintained sealed at a fixed vacuum grade.

A double wall thermally insulated heat exchanger recovers the heat dissipated by the system. Such heat recovery exchanger can use as a coolant any gaseous or liquid medium.

When reached the right vacuum, it is increased and then the enclosure is forced to inspire argon or other gases until a prefixed vacuum value; at this point the enclosure can be sealed.

All the power sources and the components of the system of the generator are connected to the omnibus ground.

The alloy of Ga-In-P-As-Ge-Au- Bi are layered along the internal walls of the reactor all around the plasma generated between the cathod and the anod.

The operation of the apparatus is directed by an Artificial Intelligence system that regulated the ratio between Amperes, Volts and Watts in function of the quadratic increase of the power while increasing the Amperes, along the Ohm equation

I = A^2 x R

An important application is the coupling of this apparatus with a LED lamp: in an experiment made with a customer we reached 200000 Lumens with 4 Watts of electric energy supplied from the grid to the apparatus. This can be very important, due to the fact that illumination absorbs the 58% of the electric energy generated in the whole world. See Photo N.1

Another possible application is to use this apparatus to charge the batteries of electric vehicles: it can supply electric charge to the batteries while the vehicle is in motion, increasing substantially the autonomy of the vehicle, just adjusting the voltage of the electricity produced to the voltage of the modules of the batteries, normally of 3.7 V.

DESCRIPTION OF THE EMBODIMENT

The invention is described in the Fig. 1, whose components are:

1- vacuum chamber with cathod and anod made by tungsten-hafnium alloy
2- enclosure made by conductive metal, possibly sealed at a fixed vacuum value
3- vacuum pump valve
4- magnet
5- DC source between gun and grid
6- DC source between gun and ground (V6>V5)
7- variac
8- power source
9- diode
10- capacitor
11- load
12-mosfet/switch
13-heat sink plus fan
14-battery
15-battery
16-pilot transistor
17-resistor
18-BNC connector of the frequency generator
19-frequency generator
20-bus-ground
21-insulators
22-resistor
23-vacuum pump
24-AC power outlet
25-grid
26-heat recovery exchanger
27-transformer
28-zener
29-opto-coupler
30-electron gun
31 oscilloscope
32 Fresnel lens
33- enclosure around the plasma layered by alloys of Gallium, Indium, Phosphorus, Arsenicum. Germanium. Gold and Bismuth.
34- layers of the alloys described in point 33

The values and characteristics of all these components can be modified by an expert of the art depending on the power of the system as well as the kind of conductive metal of the enclosure and the alloys of the layers upon the internal walls of the enclosure, without compromising the validity of this patent.

EXPERIMENT

During the year 2019. 2020. AND 2021 a series of experiments have been conducted with a setup exactly equal to the embodiment in Fig 1 and the description made in this patent text, also keeping off some of the components listed above.
It resulted in an increase of energy due to the lower impedance generated by the high vacuum and the consequent space charge generation. Also, has been measured the light residual from the

apparatus, that is suitable to be used and diffused anywhere by means of optic fibers. The light resulted to be yielded with a very high efficiency.

The experiment has been performed in the laboratory of Leonardo Corporation in Miami Beach, Florida (USA) and in Rome (ITALY) described in the following report www.researchgate.net/publication/330601653_E-Cat_SK_and_long_range_particle_interactions and the circuit was composed by all the components described in the embodiment and such components have been connected exactly as described in the Fig. 1, 2, and 3 of which we can give hereunder a more precise detail:

DETAILS OF THE EMBODIMENT

FIG.1

In the embodiment, besides the numbers above described in the legenda, there are codes that we explain now.

R1 is the resistive load of 1 kW

R2 polarizes the pilot NPN transistor 820 Ohm $\frac{1}{2}$ W

R3 polarizes the zener Z1 , 4.7 V, 10 W

R4 is 100 Ohm . 7 W , brings the gate of the mosfet to + 20 V respect the source when
   T1 is barred

R5 is 820 Ohm 1 W , limits the current in the LED internal to the opto-coupler

RTEST is 1 Ohm $\frac{1}{2}$ W to monitor by the oscilloscope of the drain current of the mosfet

The condensers are all ceramic:

C1 is the condenser of 0.15 nF 1700 V

C2 is the condenser of 100 nF 50 V to lower the dynamic impedance of the zener and to lower its noise

C3 is a condenser of 100 nF of by-pass of the 24 V battery

C4 is a condenser of 100 nF , low tension, demanded by the opto-coupler. Must be connected close to the opto-coupler's connections 4 and 6

C5 is a condenser of 50 nF , low tension of by-pass of the cathode

Z1 is the zener, to allow the current go reverse direction when the voltage is reached

D1 is the diode high tension. high speed

U1 is the opto-coupler to isolate the Siglent of the switch circuit

T1 is the pilot transistor

T2 is the mosfet SiC transistor, the switch that alternates the two modalities of the system

PH are the chips of semiconductors

AI is the artificial Intelligence that balances the ratio A V and power

HX is the heat exchanger to recover the heat irradiated by the plasma

L is the layer of alloys of Au. Ge, P. Ga. In. As. Bi

The whole switch circuit must be well isolated from the omnibus ground.

The connection 2 indicated at the batteries is the positive pole.

The Siglent must be regulated to exit a square wave ±5 V HI 0V LOW. 50% duty cycle. frequency 1-5 MHz

The transistors must be well isolated from the heat sinks

FIG. 2

This figure shows the anod connected with an inductor that exploiting the negative resistance of the plasma , due to the enrichment of the electrons emitted between cathod and anod, makes an RLC oscillation in circuit with a series of capacitors and inductors.

Components of this schematic can also be modified by experts of the art, but since they will operate on the same principle , such mutations will not affect the validity of this patent.

CLAIMS

1- Process and apparatus to make an electricity generator set made by a conductive hollow enclosure , made by metals or quartz containing conductors, connected with a power source that powers an electron gun made by a tungsten-hafnium alloy, upon which is a grid. , so that the electrons hit a target at the opposite side, while a magnet forces the electrons to run in straight line toward the target, and the enclosure is grounded until its hollow is saturated, so that when it is saturated a transistor mosfet impedes the electrons to go to ground, and a diode has to allow the electrons go to a capacitor and from the capacitor to a load

2- Electricity generator as in 1, wherein the transistor mosfet is piloted with an NPN transistor put between two resistances and powered by a frequency generator

3- Electricity generator as in 1, wherein one resistance is put between a DC energy source and the pilot transistor and the other is put between the pilot transistor and the connection with the frequency generator

4- Electricity generator as in 1 wherein a DC current source is put between the transistor mosfet and the NPN transistor

5- Electricity generator as in 1 wherein the transistor mosfet generates the frequency necessary to alternate the phase in which the electrons go to ground and the phase during which they go to the load

6- Electricity generator as described in 1 wherein a vacuum pump makes the vacuum in the enclosure through a valve and the vacuum contains Ar. or other gases and metals, possibly the enclosure being sealed at a fixed vacuum grade

7- Electricity generator as described in 1 wherein the electron gun is powered by a DC power source with a voltage lower than the voltage of the wire that connects it with the ground. that is fed by means of a DC current source

8- Electricity generator as described in 1 wherein the DC current that go to the electrons gun and the ground wire is modulated by means of a variac

9- Electricity generator, as describe in 1. wherein the electron gun is electrically insulated from the enclosure by means of proper insulating materials like ceramics or other kind of electrically insulating materials.

10- Electricity generator, as described in 1, wherein the enclosure is double walled by a heat exchanger to recover the heat dissipated from the system

11-Electricity generator, as described in 1, wherein the heat recovery exchanger can use as a coolant any gaseous or liquid medium

12-Electricity generator, as described in 1, wherein all the components and the power sources of the

system are connected to the ground by the same omnibus.

13-Electricity generator, as in 1, wherein the electron gun is charged by means of a source that is grounded through a DC line to maintain a higher potential between the cathode and the ground respect the voltage between the cathode and the grid connected to the enclosure

14-Electricity generator, as in 1, wherein the capacitor must have a voltage not higher than the breakdown voltage of the mosfet and a capacitance higher than the capacitances of the enclosure and the mosfet combined

15- Process as described in 1, to generate space charge, vacuum polarization, and virtual particles forming an electron cloud around a cathode heated in the vacuum

16-Process and apparatus, as described in 1, wherein voltages, amperages, capacitances, dimensions, teslage, choice of materials depend on the power of the system

17-Process and apparatus, as described above, wherein the mosfet is connected to a pilot transistor, put between two resistances, so that the signal arriving from a frequency generator is maintained exactly at the value at which the mosfet has to work and one DC source is put between the pilot and the generator and another DC source is put between the mosfet and the ground

18-Process and apparatus, as described above, wherein the mosfet and the pilot-transistor are cooled by heat sinks and fans

19- Process and apparatus, as described above, wherein a resistance polarizes the NPN pilot,, a resistance polarizes the zener, a resistance brings the gate of the mosfet to a +20V voltage respect the source when the pilot transistor is barred, a resistance limits the current to the led of the opto-coupler

20-Process and apparatus, as described above, wherein a condenser accumulates the electrons to be sent to the load, a condenser lowers the impedance of the zener, a condenser is for by pass of the 24 V battery, a condenser is connected to the opto-coupler, a condenser is a by-pass of the cathode

21-Process and apparatus, as described above, wherein is a zener to reverse the current when the voltage is reached between the enclosure and the mosfet switch

22-Process and apparatus as in 21 wherein a diode allows the current to go toward the capacitor when the voltage is reached

23-Process and apparatus as in 21 wherein an opto-coupler isolates the Siglent from the switch circuit

24-Process and apparatus as described in 21 wherein a pilot transistor addresses the current to the SiC switch mosfet

25-Process and apparatus, as described in 21, wherein a mosfet SiC regulates the alternate cycles of the process, allowing the current to go to ground or to the enclosure

26- Process based on the following theory of the inventor: the space charge in a vacuum-favoured space are allowed by the formation of virtual particles of matter and antimatter that shield the repulsion between electrons during their lifespan, that is inversely proportional to their mass-energy and therefore enough to allow the shielding effect, generating a lowering of the voltage required to

accumulate a charge in capacitor plates and consequently generate a macroscopic voltage and an energy gain.

The gas of electrons is generated by long range electrostatic screening, derived from a vacuum polarization, generated by the creation-annihilation of virtual charges pairs as a consequence of the quantum fluctuations predicted by the Heisenberg uncertainty principle, so that electric energy is generated on the walls of the enclosure.

Therefore starting from the zero point energy derived from the Heisenberg uncertainty pribciple, dV/dt increase the Zitterbewegung and the Aharonov Bohm effect, causing electrons phase change, causing formation of clusters of electrons in phase, causing minor entropy, thermal capacity and freedom degrees, causing transfer of energy to electrons not in phase, causinf more photon emission.

27- Process and Apparatus, as described above, wherein an expert of the art can easily obtain the same or analogous results changing one or more of the components described, therefore such mutations cannot invalid the claims of this patent

28- Process and apparatus, as described above, wherein the plasma is sorrounded by alloys layered on the internal walls of the reactor made by the following components: Au, Ga, In, P, Ge, As, Bi

29- Process and apparatus, as described above, wherein an artificial intelligence device optimizes in time the ratio between V, A, W, in function of the fact that increasing the Amperes the power increases exponentially with the square of the Amperes

30- Process and apparatus, as described above, wherein the plasma reactor is contained inside a heat exchanger that recovers the thermal energy generated by the plasma

31- Process and apparatus, as described above, wherein the negative resistance generated by the plasma is exploited to obtain an oscillation with an RLC circuit made by series of inductors and capacitors

32- Process that starting from "point zero energy" makes a high dV in the ratio dV/dTenforcing the zitterbewegung of the electrons and the Aharonov-Bohm effect , changing the phases of electrons that therefore are put in clusters in coherence of phase, generating lower entropy, lower thermal capacity and less freedom degrees, transferring such excess of energy to electrons not in coherence of phase, with a consequent excess of photons emission

33- Process and apparatus, as described above, wherein the artificial intelligence system directs the apparatus in a way that exploits the exponential increase of power when increasing the Amperes

34- Apparatus, as described above, that can be coupled with a LED lamp obtaining an efficiency of illumination higher than in the existent lamps of any kind

34- Process and apparatus, as described above, wherein the residual light inside the apparatus can be conveniently used transferring it wherever necessary by means of optic fibers, with very high efficiency

35- Apparatus, as described above, that can be used to charge the batteries of electric vehicles while they are in motion, increasing their autonomy, just adjusting the voltage of the electricity generated to the voltage of the modules of the vehicles' batteries (normally, but not necessarily, 3.7 V)

AIR INLET

RESISTANCES IN OHM
CONDENSERS IN nF
TENSIONS IN VOLTS
Resistenze in ohm
Condensatori in nF
Tensioni in Volt

HEAT EXCHANGER

BLOCK 2
FIG. 2

contenitore in rame
COPPER CONTAINER

SEMICONDUCTORS
FRESNEL LENS
GAS PARTIAL VACUUM

R1= 1000 1KW

C3=0.15

D2

C1 100

B1=24

R2=6

R3=10

C2=100

47

Z1

T2SC

R TEST=1

T1

R4= 100

R2=820

C4=100

R8=5

OPTO GATE
TLP2767
U1
GND
VA
VFA
Anode
Cathode

VARIAC

BB=10

R9=820

BNC
AI Siglent

AIR OUTLET

ECAT-SK / D.E.
PERS

FIG. 1

03-30-19

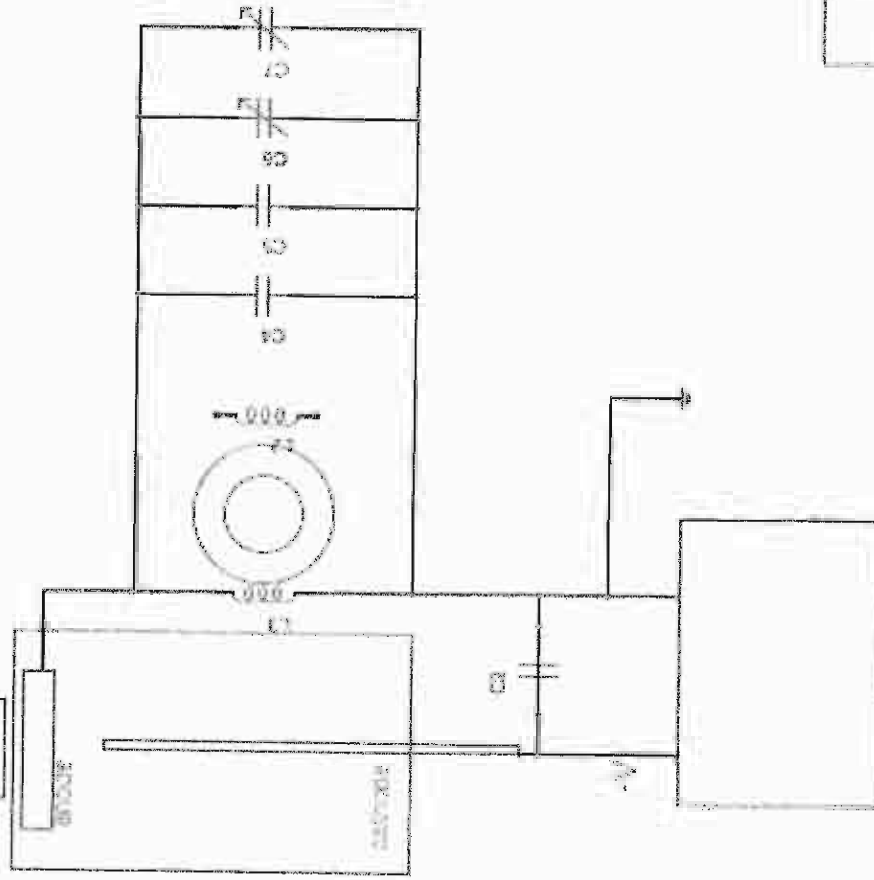E-Cat SK

INDUCTORS { L3 77 turns, 210 uH
            { L2 8 turns

C4, C5 4.7 nF (disc shaped capacitors)
C6, C7 3.5 nF (variable capacitor)
C3 polipropilene capacitor 3 uF
-V Negative current source E-Cat SK

Magnet

BLOCK 2

FIG. 2