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Nuclear Power

A nuclear power station is an energy cell, but it has numerous insurmountable problems.

Because nobody knows where nuclear energy comes from, this power station can only be fuelled by the critical mass of radioactive matter; i.e. matter that releases neutron energy naturally. However, this means that the fuel is extremely dangerous and initiation cannot be stopped. Moreover, only a tiny percentage of the fuel can be utilised before it becomes useless, after which, it must be stored for millions of years until it has reverted (through natural fission) to lead. This is extremely costly and a serious danger to every form of life on the planet.

These power stations are also extremely inefficient. They require the input of many times more resources and energy than they ever release in the form of electricity. And their minimum practical size means that they must be centralised, requiring power transmission lines to distribute the electricity they generate. This form of power generation and distribution is ugly,

dangerous, expensive and impractical.

All of these problems stem from our current belief that; a) the sun's energy comes from <u>fusion</u>, and; b) we have no idea where nuclear energy originates;

neither of which is a valid argument today, because we now know that;

c) a star's intense heat is generated from <u>internal [spin]</u> <u>friction</u> and released as <u>fission</u> in its common (nonradioactive) matter, and;



d) <u>neutrons</u> are <u>proton-electron pairs</u> that store the energy they were generating at the time of their union; 9.7868191355366E+13 Joules per kilogram (exact);

we should know that the only genuine source of all universal energy is in neutrons, which exist in all matter, not just radioactive matter.

Neutrons provide all the energy we need to solve all of our problems forever; there is sufficient energy in one-millimetre of the earth's crust (rock) to last us until the end of the current universal period (longer than mankind will exist), so we never need to look for alternative (e.g. *sustainable*) sources of energy. The only future improvement needed is in its efficient recovery.

Neutron Energy Cell

Just as with stars, the release of neutron energy from non-radioactive matter can be stopped simply by removing the triggering heat source. If a star lost its planets, and thereby lost its internal spin-friction, its fissionable energy generation would cease. The same would occur in a neutron energy cell. And because a neutron energy cell does not need radioactive fuel, it can be any size and capacity, eliminating the need for electricity transmission lines. Energy cell(s) of any size could be installed within or without any building and can be fuelled from any matter lying around it. It can also recycle nuclear waste.

Because an energy cell can be any size, it can also be installed in a <u>vehicle</u>. And given that its fuel is inactive and inorganic it is safe, making it the perfect alternative to all other forms of propulsion energy generation.

This energy cell is silent, its fuel is free and its by-product is hydrogen; making it clean, safe and cheap to run.

No more mining, drilling, transmission lines, pipelines, refuelling stations, refineries, solar cells, wind farms, power stations, etc. etc.

It is more than one-million percent efficient, and inevitably, will eventually replace all other forms of energy generation, immeasurably improving all our lives and our environment. But this will only occur after mankind has ceased to believe in mythical science, and/or somebody out there understands <u>The Mathematical Laws of Natural Science</u> and has the resources to make it happen.

Title of the Invention:

The release of neutron energy using lasers.

Abstract:

The present invention relates to a practical method for the safe and controlled release of neutron-energy using lasers.

Cited Documents

A: Neutron Energy.

References:

The Life & Times of the Neutron; Keith Dixon-Roche; ISBN 978-1-08251-683-2

The Mathematical Laws of Natural Science; Keith Dixon-Roche; ISBN 979-8-61029-449-0

Definitions:

By definition: **electro-magnetic energy** shall mean the massless radiated electrical and magnetic wave-energy radiated by a proton-electron pair commensurate with the electron's orbital velocity. Electro-magnetic energy is what we generally refer to as gamma, X, light, radio, micro, heat, etc. It travels at a constant velocity of light-speed irrespective of its intensity.

By definition: **EME** shall mean electro-magnetic energy.

By definition: **light-speed** shall mean the velocity of EME through a medium, where: for example, the velocity of EME through a vacuum is approximately 299792459 metres per second.

By definition: **fission** shall mean the splitting of neutrons into their component parts; a proton and an electron.

By definition: **alpha-particle** shall mean a proton ejected from an element when a neutron is separated into its component parts (an electron and a proton).

By definition: **beta-particle** shall mean an electron ejected from an element when a neutron is separated into its component parts (an electron and a proton).

By definition: **proton-electron pair** shall mean a proton partnered with an orbiting electron.

By definition: hydrogen (atom) shall mean a proton-electron pair.

By definition: **deuterium** (atom) shall mean a hydrogen atom with a single neutron attached.

By definition: **tritium** (atom) shall mean a hydrogen atom with two neutrons attached.

By definition: **helium** (element) shall mean an element comprising two deuterium atoms.

By definition: **particles** shall mean the electron and the proton that together constitute a proton-electron-pair.

By definition: **neutron** shall mean an atomic particle comprising a proton-electron pair that united when the orbiting electron had achieved light-speed. Note: neutrons are only created inside an element and cannot exist alone.

By definition: **atomic nucleus** shall mean the collection of protons and neutrons in the core of an element.

By definition: **neutron-creation** shall mean the uniting of an element's proton-electron pair(s) whose electrons orbiting in shell-1 achieve light-speed.

By definition: **shell** shall mean the circular orbit of an element's orbiting electron. Each shell contains two electrons and is equally spaced from its neighbouring shells. Shells are referred to as follows; the innermost shell as number one, the next shell as number two, and so forth. There are no valences. All electrons lost to an atom through electrical current are stripped from the outermost shell progressively inwards. A valency created by an electron knocked from an inner shell will immediately be filled by an electron orbiting in the next outer shell. All other outer electrons will subsequently relocate inwards until all valences are filled and all electrical forces balance. Shell radii are inversely proportional to the electron's orbital velocity. In any and all elements, the orbital velocity of the electron(s) in shell-1 is greatest, the orbital velocity of the electron(s) in shell-2 is less, the orbital velocity of the electron(s) in shell-3 is proportionally lesser still, and so forth.

By definition: **atom** is a deuterium or tritium atom.

By definition: Isaac Newton's **atomic constant of proportionality**: **K** = 0.15587874533403 s²/m³

By definition: **element** is a collection of deuterium and tritium atoms.

By definition: **neutronic ratio** shall mean the relative elemental population of tritium atoms to deuterium atoms, which may vary as follows, Maximum theoretical range; $1 \le \psi \le 2$ Limiting practical range; $1 \le \psi \le 1.66666$ Natural range; $1 \le \psi \le 1.6$ By definition: **critical ratio** shall mean a neutronic ratio that exceeds the maximum in nature; $\psi \ge 1.6$.

By definition: **neutronic radius** shall mean an electron's orbital radius when it achieves light-speed and immediately before it unites with its proton partner to create a neutron; $\mathbf{R}_n = 2.81793795383896E-15$ metres

By definition: **neutronic temperature** shall mean the electro-magnetic energy radiated when an orbiting electron achieves light-speed, where: $T_n = 623316124.717178$ Kelvin.

By definition: **neutron-energy** shall mean the energy stored in a neutron (all neutrons store the same energy), which is the sum of all energies (kinetic plus potential plus spin) generated by the particles at the time of their union as a neutron, where: $E_n = |KE| + |PE| + |SE| = 1.6374222445251E-13$ Joules

By definition: **neutron-energy release** shall mean the splitting of neutrons into their component parts in the form of alpha and beta particles, or their reversion to proton-electron pairs. This will begin to occur when the targeted element exceeds the critical ratio. This energy will be released as a combination of heat (EME) and alpha and beta particles.

By definition: **controlled release** shall mean the ability to automatically or manually inhibit further release of neutron-energy.

By definition: **neutron depletion** shall mean the release of neutron-energy from a fuel's elements.

By definition: **fuel** shall mean any matter or substance of any mass comprising any combination of elements irrespective of radioactive level.

By definition: **by-product** (or residual) shall mean the matter remaining after an element has been reduced to atoms through neutron-energy release. This residual will comprise mostly (>99%) hydrogen and helium, and to a lesser extent (<1%) deuterium & traces of tritium.

By definition: **ejection velocity** is the velocity at which a proton is ejected at the time of neutron-energy release, which is calculated as follows:

 $F = k.e^{2}/\mathcal{O}_{n}^{2} \{kg.m/s^{2}\}$ $a = F/m_{p} \{m/s^{2}\}$ $v = \sqrt{[a.\mathcal{O}_{n}]} \{(m/s)^{2}\}$ $v^{2} = k.e^{2}.\mathcal{O}_{n} / m_{p}.\mathcal{O}_{n}^{2} = k.e^{2} / m_{p}.\mathcal{O}_{n} \{(m/s)^{2}\}$ v = 6,230,746.60879046 m/s

By definition: a **chain reaction** shall mean the compound release of neutron-energy due to the kinetic energy in the alpha particles. A single proton ejected from a neutron will split

(through impact) numerous neighbouring neutrons, each of which will release the energy from more neighbouring neutrons, and so forth. Protons will travel at ejection velocity over an inter-atomic distance of <1E-09 metres (the spacing between adjacent neutrons) resulting in a period between neutron-energy releases of <1.605E-16 seconds. Protons will not impact neighbouring protons due to their identical electrical charges.

By definition: **activation energy** shall mean a source of EME applied to an atom for the purpose of generating new neutrons.

By definition: **laser** shall mean a highly focussed EME emitter.

By definition: **laser emission** shall mean the high energy EME emitted by a laser.

Description

Due to the need to achieve neutronic temperature, the release of neutron energy means converting solid or liquid matter to gas, making its elements difficult to target. It is therefore necessary to achieve neutronic-temperature sufficiently quickly to prevent the targeted element(s) from moving away from its position(s) in solid state.

Neutron-energy release is achieved by focusing laser energy over a desired number of elements with sufficient EME to unite their innermost proton-electron pairs as neutrons until the elements achieve the critical ratio, thereby initiating a chain reaction. The time taken to achieve this condition will depend upon the following factors:

- 1) the number of targeted elements (focal area),
- 2) laser emission intensity, and
- 3) gas pressure retention.

Neutron-energy generation efficiency will ensure that - after initiation - activation energy may be supplied from the output generated, making this process self-energising. Moreover, following initiation, the activation energy may be altered to maintain a constant output level.

The selection of appropriate element(s); based upon neutronic ratio will determine;

- 1) the initiation and activation energies
- 2) the dominant form of neutron-energy release (particle or EME)
- 3) laser focusing

At room temperature, all potential fuel elements range in size between lithium (2.341954887E-08 metres) and uranium (5.38649624E-07 metres) giving a minimum laser requirement of between 30 nanometres and 0.6 micrometres, dependent upon fuel.

The quicker neutron-energy release is achieved the more efficient the process, i.e.; the lower the chance of losing elements through gas-transition. The theoretical requirement for instant initiation in an iron element (for example) is 7.617E-13 Joules (cited document A; Table 2), which has an atomic diameter of 1.522271E-07 metres at room temperature, or 7.32664E-14 metres at the neutronic temperature, imposing a laser emission of at least; 7.617E-13 x 2E-07 ÷ 7.32664E-14 = 1.03963E-06 Joules (energy intensity of; \geq 13.237 tera-Joules per square-metre).

Because the minimum laser size ($3E-08 < \emptyset < 6E-07$ metre) is larger than the smallest laser available at the time of this document (1E-09 metre), and the emission energy so low, today's technology can be declared capable of neutron-energy release in all elements.

As each kinetic proton splits more neutrons (through impact), more neutron-energy is released. As in nuclear reactors and atomic bombs, this energy release is of a compound

nature. However, not all impacted neutrons will eject their particles, some will be retained releasing their energy in the form of EME (heat). The preferred form of energy release; alpha-particle or EME, will be realised by the selection of the most appropriate fuel matter. For example; matter comprising a large proportion of high neutronic ratio matter will generate a higher proportion of alpha-particle emission, and conversely; matter comprising low neutronic ratio matter will generate a higher proportion of EME.

The theoretical efficiency of such a process will be anything up to 2,080,922,867% dependent upon;

- 1) laser emission efficiency,
- 2) focal area control, and
- 3) energy recovery efficiency.

Even a 90% loss in each of the above will still result in a total recovery efficiency of more than 2,000,000%, making this the most efficient energy generation method possible.

Neutron-Energy Release Method

Lasers with an emission energy intensity insufficient for instant neutron release (<13.2 TJ/m²) may enable targeted element(s) to become mobile (gaseous) and therefore more difficult to target. In such circumstances, it will be necessary to trap or confine targeted elements to allow sufficient time to achieve the neutronic temperature.

Lasers with an emission energy intensity sufficient for instant neutron release (>13.3 TJ/m²) will obviate the need to confine target elements. In this case, one or more lasers may be aimed at a common point in the fuel source (or matter) sufficient to heat the desired number of protonelectron-pairs; to the neutronic temperature (1).

any matter lazer-beams targeted at a common point in any matter temperature of atoms at common point reaches neutronic temperature

Immediately the innermost proton-electron pairs (in the targeted atoms) have reached the neutronic temperature, they will become neutrons, increasing the atom's neutronic ratio. As soon as the neutronic ratio reaches or exceeds 1.6, its neutrons will begin to revert to proton-electron pairs releasing EME and/or kinetic protons, which will impact other neighbouring neutrons releasing their energy; a chain reaction. But a chain reaction that can be switched off simply by removing the heat source.

(1)

The EME (heat) created by proton-electron pairs retained within elements may be used to heat water and thereby drive a turbine to generate electricity.

Proton emission from ejected particles may be used to drive turbine screws directly or for treating cancer cells, and thereby avoiding the prohibitive cost of today's cyclotrons.

Claims:

Refer to **Definitions** for a definition of the terms used in these claims.

1. The use of a laser with an energy emission intensity greater than 6E+011 tera-Joules per square-metre and an emission diameter of between 1E-09 metres and 1E-06 metres (heretofore referred to as a high-energy laser) to release neutron-energy.

2. The use of a laser with an energy emission intensity of approximately 6E+011 tera-Joules per square-metre and an emission diameter of between 1E-09 metres and 1E-06 metres (heretofore referred to as an optimum-energy laser) to release neutron-energy.

3. The use of a laser with an energy emission intensity less than 6E+011 tera-Joules per square-metre and an emission diameter of between 1E-09 metres and 1E-06 metres (heretofore referred to as a low-energy laser) to release neutron-energy.

4. The use of multiple high-energy lasers to release neutron-energy.

5. The use of multiple optimum-energy lasers to release neutron-energy.

6. The use of multiple low-energy lasers to release neutron-energy.

7. The targeting of a high-energy laser, or an optimum-energy laser, or a low-energy laser (heretofore referred to as 'a laser') onto the surface of a fuel to release neutron-energy.

8. The targeting of multiple high-energy lasers, or multiple optimum-energy lasers, or multiple low-energy lasers (heretofore referred to as 'multiple lasers') onto the surface of a fuel to release neutron-energy.

9. The targeting of a laser emission into the base of a tunnel formed within a solid body of fuel to release neutron-energy.

10. The targeting of multiple laser emissions into the base of dedicated tunnels formed within a solid body of fuel to release neutron-energy.

11. Controlling the release of neutron-energy by altering the intensity of a laser emission.

12. Controlling the release of neutron-energy by altering the intensity of multiple laser emissions.

13. Controlling the release of neutron-energy by deactivating a laser.

14. Controlling the release of neutron-energy by deactivating selected lasers.

15. Terminating neutron-energy release by deactivating a laser.

16. Terminating neutron-energy release by deactivating multiple lasers.

17. The use of alpha particles released by neutron-energy generation for the treatment of cancerous cells.