

# Source of excess energy

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## Abstract

The author offers for discussion an explanation for the excess energy in cold fusion, an explanation which incorporates the concept of negative time. The mathematical basis relies on the work of Dr. N. Kozyrev (Russia), Dr. Nassikas (Greece), and Thomas Bearden (USA).

## Introduction

"The Hypothesis and The Equations of The Unified Matter Field" by Dr. A. A. Nassikas [1], is a rare instance of scientific and mathematical publication devoted to fundamental questions that leads to a practical approach to space-time engineering. In some sense it is a new solution for the development of free energy and gravitation technologies. Dr. H. E. Puthoff provided an overview of the topic based on the Casimir-effect [2]. This was quite interesting, but the author's conclusion was "only in principle, yes," but the engineering (practical applications) is "a long way off." Also that the "warp drive" idea in the papers (1994-1997) of Dr. Miguel Alcubierre, Max-Planck-Institute for Gravitationsphysik, Albert-Einstein-Institute, Germany, is a fine idea, but it does not provide any technological solution. The only author who proposed practical approaches to vacuum engineering is Thomas E. Bearden. Let's see what analogies there may be between Nassikas' work and the "Gravitobiology" by T. E. Bearden to indicate the shortest practical way toward the technologies of the future.

## The Engine of Space-Time

The vacuum or 'space-time medium' of T. E. Bearden is described as cells of so called "gravitons." Those are "the coupled photon/anti-photon pair." Note, that it is a paired process. To make it more clean physically, we have to introduce the negative time axis for the "anti-photon-" So, the notion for the "virtual particles" that is used in many papers as the unlimited sea of free energy can be physically introduced only with the notion of "negative time," and we must take into account the "surface of time" or the "area of possible time directions." In this choral area, the pair of photon/anti-photon seems to be a balanced situation of two processes that don't require any energy input, but it is a situation that produces both photon and anti-photon forms of energy. In other words, it is the "energy creation mechanics" itself. The law of energy conservation seems to be the law for a "direct time" and "reversed time" balanced situation only. Certainly in our reality it is possible to detect by means of some measurements only half of the process, i.e. the positive time process of the photon energy.

According to the hypothesis of Dr. A. A. Nassikas, there is no space-time without energy since "The existence or the non-existence of energy implies the existence or the non-existence of space-time, and consequently of any geometry." On this point his concept is closely connected with Bearden's "vacuum engine." Next point: by Nassikas, the energy of positive or negative electrical charge of the particle, i.e.. its potential field energy can be presented as "equivalent to

its internal time." So, the sign of the charge can be defined by the "time axis direction" and the process of the electron is some opposition to the process of the positron. Bearden's photon/anti-photon pair is a similarly balanced situation. Note, the mass particle here is considered as some dynamical process [3], that is corresponding to some four-dimensional resonance condition, demonstrated in calculations for the DNA-molecule and for other natural material elements.

A practical solution was proposed by Thomas Bearden to create "the local rate of flow of time" that is "determined by the "local time-stress of vacuum potential" is to apply some non-linear materials for translation of energy between different frequencies and harmonics of electromagnetic waves. Normally, i.e. in the ordinary time-flow situation, the non-linear material produce the harmonics from a fundamental wave. But Bearden says that "in a true time-reversed situation, non-linear materials can exhibit the production of a stronger fundamental from a combination of the fundamental and its harmonics." The principle that is designated by Bearden as "Stokes' principle of time reversibility" (G.G.Stokes (Camb. DubI, Math. J. 4. 1849, p.1) is interesting, but we have to discuss something beyond this that is connected with the potential form of energy, i.e. with Bearden's "stress of vacuum."

Dr. A. A. Nassikas and Dr. Miguel Alcubierre independently proposed to use the difference in local rate of the time flow as the source for a propulsion force. According to Nassikas, if "the space under the object attracts the object" more or less than the upper one in strength of the different relative times around the object, gravitational Propulsion can be achieved. So, all we need to take the next step from theory to technology is to find a way to change the rate of time. Is it too difficult? No, it is quite simple if we take into account some points:

a) The notion "time" in any case is connected with some certain material system, for example, with some elementary particle or with some planetary system. The different velocity of light in different materials is a demonstration of this connection.

b) The "space" of some curvature (of some rate of time) is a bi-directional or many-directional energy process. Electricity is one of many possible balanced situations that is described as a bi-directional or two-polarity case. For many-polarity energetic situations there is the possibility of three or more time-flow directions.

c) There is no difference in principle between an atom and the space around that atom, according to Faraday [4]. So, the balanced chronal situation of the vacuum engine corresponds to some real properties of matter and we can work with matter to reach the changes in the balance of the vacuum engine in the area of this material object.

The vacuum is the medium of some known physical properties, for example, the dielectrical permittivity. Physically, it is connected with the velocity of spreading of the photon, and since we can work with different materials of known properties, it means we have the possibility of changing the parameters of the vacuum engine itself. One quite old example of a practical application is USA Patent number 3,187,206, granted in 1959 to Thomas T. Brown. The gradient of dielectrical permittivity is proposed and experimentally proved as the source of reactionless force. It is necessary to note that the same reactionless force is created at the border between two different dielectrical materials of the electrical capacitor, as it is described in many textbooks on the properties of dielectrical materials. The problem of taking the next step to fundamental conclusions is understanding the physical connection between the permittivity of a material, the velocity of light in the material, and the local rate of time for this area of space. The patents by Thomas T. Brown include also asymmetrical interaction between electrodes. i.e, the topology of the electrical field. Let's note the analogy between Nassikas' idea above on "energy and geometry of space" and the invention by Brown of reactionless propulsion. The

gradient of the electrical potential that is created in the natural way with distance from the electrically charged particle is a demonstration of the natural topology of space, i.e. the electrical field is created according to the law of creation of space itself. It is the reason for the analogy between the formulation for electrical and gravitational interaction. We have the possibility of changing the topology of the electrical field, for example by means of the asymmetrical dielectrical member in the capacitor of Brown. So we have the possibility of compensating the natural gradient created by the properties of space. It is the way to space-time engineering.

So, the conception by Dr. Nassikas and idea of Dr. Alcubierre are a fine theoretical basis for the technology that was discovered and proved in practice by Thomas T. Brown. Modern industry, specialized in dielectrical materials, is ready now for cheap mass production of warp drive systems. The same technology may be the basis for self rotating generators. The way is short and all we need is the commercial demand and engineering formulation of a step-by-step program.

The concept of negative time by Dr. Nassikas can be useful also in understanding the over-unity effect that is demonstrated in some cold fusion cells. The well-known Pons-Fleischmann experimental set-up includes a cathode that is over-saturated by protons when the set-up is operating. So, the local concentration of positively charged protons can be considered as a local imbalance in vacuum engine and the local rate of time in this area is different from the normal one. The processes are produced by this local change of the curvature of space are multilevel complex energy exchange, but the source of over-unity is the local concentration of positive electrically charged protons that is due to the input power source. Let's consider this point more carefully.

Any electrically charged particle can be presented as some volume of space i.e. the gravitational space by Nassikas, G-space of energy  $E_g$ , that is joined with some imaginary electromagnetic space of energy  $E_{em}$ . Conservation of energy is presented as:

$$dE_{em} + dE_g = 0 \quad F.1$$

In my view, it is useful to change equation E1 to the form:

$$dE_{em} = - dE_g \quad E2$$

In this case it is obviously that mathematically the space of  $E_{em}$  has an "imaginary" value, since the energy and the velocity are connected by the quadratic root of the negative number.

The over-unity output in cold fusion systems means the production of the excess heat energy. Certainly, some cold fusion systems demonstrate power output as the result of nuclear transmutation processes. But if we are considering the water to be distilled  $H_2O$  in which fusion does not occur, I have to suppose only one way for excess heat production:

$$dE_{em} > 0 \text{ if } dE_g < 0 \quad E3.$$

I must note that the idea is not a new one since the famous Russian astrophysicist N.A. Kozyrev created in 1947-1980 the "conception for active properties of the time." There is some natural physical mechanism for production of heat energy that is demonstrated by any star and it is not the thermonuclear reaction but the transformation of energy by the mechanism of Kozyrev. In that concept, the kind of energy that is used by the star for heat energy production is the "time flow." On the other hand, we can take into consideration the gravitational description of space instead of its chroral description, and the production of the heat is the transformation of  $E_g$  that we noted above.

N.Kozyrev analyzed the wide experimental astrophysical data to find the answer for the question of the common "special condition of matter" inside any star to provide the transformation of energy  $E_g$  into energy  $E_m$ . His conclusion [5] is quite simple:

$$B/n = 6 \text{ eV} \quad \text{F.4}$$

where "B" is the density of the beam energy of the star and "n" is the density of electrons in the volume of space.

We certainly cannot create the conditions of stellar matter in the laboratory, but for a Pd-cathode in a cold fusion cell, the situation is quite similar to Kozyrev's equation F.4 and heat production can be detected as result of F.3. The difference is the application of protons instead of electrons. To calculate this we have to use the volume density of protons  $H^+$  in the material of the cathode instead of the volumetrical density of electrons "n" in star matter.

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