

New Energy Technologies

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Research on advanced aerospace systems and new energy sources

Issue N 2(17)2004

*Minato's Magnetic Motor
Efficiency More
than 300%*



A Japanese inventor starts mass production of his motors

Also in this issue:

- Tesla's and Schauburger's Technologies in Modern-day Experiments
- Vortex Heat Generators of Potapov and Other Inventors
- Novozilov's Fuelless Thermomagnetic Drive
- Designing Ivanov's Ether-based Propulsion Units
- Searl Effect Commercialization

Atomic Hydrogen in the Energy Field



Alexander V. Frolov in the laboratory:
the test bench used in the experiments for
studying hydrogen recombination

*Experimental data on impulse
mode operation of a tungsten
cathode in hydrogen:
efficiency is more than 200%*



General view of a special
diode produced for the present
project. Its upper part is a water
-cooling tank.

The project was started in February, 2003 as a joint project with the Spectrum Investments Ltd. Company. First measurements were made in September, 2003 proving the possibility of using cycles of hydrogen dissociation and recombination in a closed loop system for effective heat generation. The main element of the installation is a diode equipped with a filament-type tungsten cathode. The diode's case is filled with hydrogen, which is under a pressure equaling fractions of an Atmosphere. In May, 2004, new data was obtained, also confirming the proposed concept. An application for a Russian Federation patent was filed; an application for an international patent for the present method and device is currently being prepared.

Serious contacts with interested scientific organizations and investors are needed to further develop the present research.



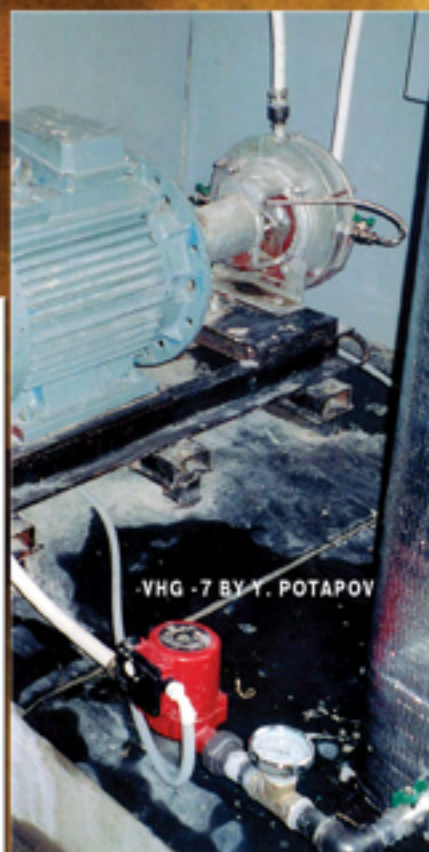
The main lines of development of the research into the present subject are: studying the dependence of the effect on the pressure of hydrogen and the modes of impulse heating the cathode. If successful, we will be able to achieve an efficiency of 83:1 or more. An autonomous operation mode can also be achieved, which means that fuelless heat-power stations can be created on the basis of the present method. At the same, time the metal-ceramic case will provide a higher reliability than a standard monitor or any other vacuum-tube device. This technology in principle is radiation safe. On a small scale, this effect occurs in any radio valve. We have just found a new and useful practical application for the present effect.

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Vortex Heat Generators



EFFICIENCY OF WATER
HEATING ANNOUNCED
BY THE DEVELOPERS
IS 150-300%



Read a review on vortex heat generators in this issue

A VISIT TO YURI S. POTAPOV



VORTEX HEAT GENERATOR



THIS VORTEX HEAT GENERATOR IS INSTALLED IN MOSCOW. INPUT POWER IS ABOUT 35KW. THE TOTAL SPACE OF THE TRADE CENTER, WHICH IS PLANNED TO BE PROVIDED WITH HEAT IS ABOUT 2,000 SQUARE METERS.



PHOTOS SHOW A TURBINE OPERATING WITH USE OF AN AIR COMPRESSOR, WHICH IS ABLE TO PROVIDE UP TO 5 KW OF POWER.



THE TURBINE'S SHAFT (ON THE RIGHT SIDE OF THE PHOTO) IS CONNECTED TO THE REDUCER

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New Energy Technologies

Magazine

Scientific news on advanced propulsion systems for aerospace industry and new energy technologies

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The Techno Maestro's Amazing Machine Kohei Minato and the Japan Magnetic Fan Company

by **John Dodd**
<http://www.japaninc.com/>



Note: This article is published under permission of Japan Inc. magazine (Terrie Lloyd)

The source of information: www.japan.com

A maverick inventor's breakthrough electric motor uses permanent magnets to make power — and has investors salivating

When we first got the call from an excited colleague that he'd just seen the most amazing invention — a magnetic motor that consumed almost no electricity — we were so skeptical that we declined an invitation to go see it. If the technology was so good, we thought, how come they didn't have any customers yet?

We forgot about the invitation and the company until several months later, when our friend called again.

"OK," he said. "They've just sold 40,000 units to a major convenience store chain. Now will you see it?"

In Japan, no one pays for 40,000 convenience store cooling fans without be-

ing reasonably sure that they are going to work.

The maestro

The streets of east Shinjuku are littered with the tailings of the many small factories and workshops still located there — hardly one's image of the headquarters of a world-class technology company. But this is where we are first greeted outside Kohei Minato's workshop by Nobue Minato, the wife of the inventor and co-director of the family firm.

The workshop itself is like a Hollywood set of an inventor's garage. Electrical machines, wires, measuring instruments and batteries are strewn everywhere. Along the diagram-covered walls are drill presses, racks of spare coils, Perspex plating and other paraphernalia. And seated in the back, head bowed in thought, is the 58-year-old techno maestro himself.

Minato is no newcomer to the limelight. In fact, he has been an entertainer for most of his life, making music and producing his daughter's singing career in the US. He possesses an oversized presence, with a booming voice and a long ponytail. In short, you can easily imagine him onstage or in a convertible cruising down the coast of California — not hunched over a mass of wires and coils in Tokyo's cramped backstreets.

Joining us are a middle-aged banker and his entourage from Osaka and accounting and finance consultant Yukio Funai. The banker is doing a quick review for an investment, while the rest of us just want to see if Minato's magnetic

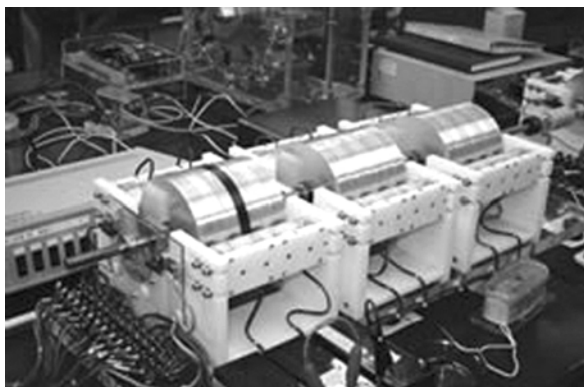
motors really work. A prototype car air conditioner cooler sitting on a bench looks like it would fit into a Toyota Corolla and quickly catches our attention.

Seeing is believing

Nobue then takes us through the functions and operations of each of the machines, starting off with a simple explanation of the laws of magnetism and repulsion. She demonstrates the "Minato Wheel" by kicking a magnet-lined rotor into action with a magnetic wand.

Looking carefully at the rotor, we see that it has over 16 magnets embedded on a slant — apparently to make Minato's machines work, the positioning and angle of the magnets is critical. After she kicks the wheel into life, it keeps spinning, proving at least that the design doesn't suffer from magnetic lockup.

She then moves us to the next device, a weighty machine connected to a tiny battery. Apparently the load on the machine is a 35kg rotor, which could easily be used in a washing machine. After she flicks the switch, the huge rotor spins at over 1,500 rpms effortlessly and silently. Meters show the power in and power out. Suddenly, a power source of 16 watt or so is driving a device that should be drawing at least 200 to 300 watts.



Nobue explains to us that this and all the other devices only use electrical power for the two electromagnetic stators at either side of each rotor, which are used to kick the rotor past its lockup point then on to the next arc of magnets. Apparently the angle and spacing of the magnets is such that once the rotor is moving, repulsion between the stators and the rotor poles keeps the rotor moving smoothly in a counterclockwise direction. Either way, it's impressive.

Next we move to a unit with its motor connected to a generator. What we see is striking. The

meters showed an input to the stator electromagnets of approximately 1.8 volts and 150mA input, and from the generator, 9.144 volts and 192mA output. $1.8 \times 0.15 \times 2 = 540\text{mW}$ input and $9.144 \times 0.192 = 1.755\text{W}$ out.

But according to the laws of physics, you can't get more out of a device than you put into it. We mention this to Kohei Minato while looking under the workbench to make sure there aren't any hidden wires.

Minato assures us that he hasn't transcended the laws of physics. The force supplying the unexplained extra power out is generated by the magnetic strength of the permanent magnets embedded in the rotor. "I'm simply harnessing one of the four fundamental forces of nature," he says.

Although we learned in school that magnets were always bipolar and so magnetically induced motion would always end in a locked state of equilibrium, Minato explains that he has fine-tuned the positioning of the magnets and the timing of pulses to the stators to the point where the repulsion between the rotor and the stator (the fixed outer magnetic ring) is transitory. This creates further motion — rather than a lockup.

Real products

Nobue Minato leads us to the two devices that might convince a potential investor that this is all for real.

First, she shows us the cooling fan prototype that is being manufactured for a convenience store chain's 14,000 outlets (3 fans per outlet). The unit looks almost identical to a Mitsubishi-manufactured fan unit next to it, which is the unit currently in wide use. In a test, the airflow from both units is about the same.

The other unit is the car air conditioning prototype that caught our eye as we came in. It's a prototype for Nippon Denso, Japan's largest manufacturer of car air conditioners. The unit is remarkably compact and has the same contours and size as a conventional unit. Minato's manufacturing skills are clearly improving.

The banker and his investment

Minato has good reason to complain about Japan's social and cultural uniformity. For years, people thought of him as an oddball for playing the piano for a living, and bankers and investors have avoided

him because of his habit of claiming that he'd discovered a breakthrough technology all by himself — without any formal training.

However, the Osaka banker stands up after the lecture and announces that before he goes, he will commit ¥100 million to the investment pool.

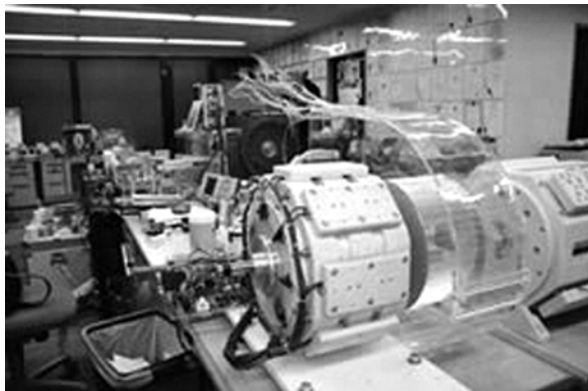
Minato turns to us and smiles. We brought him good luck, and this was his third investor in as many weeks to confirm an interest.

Bringing the tech to the table

With the audience gone, we ask Minato what he plans to do to commercialize the technology. His game plan is simple and clear, he says. He wants to retain control, and he wants to commercialize the technology in Japan first — where he feels he can ensure that things get done right. Why doesn't he go directly to the US or China? His experiences in both countries, he suggests, have been less than successful. "The first stage is critical in terms of creating good products and refining the technology. I don't want to be busy with legal challenges and IP theft while doing that."

Still, the export and licensing of the technology are on his agenda, and Minato is talking to a variety of potential partners in other countries.

Whereas another inventor might be tempted to outsource everything to a larger corporation, part of what drives Minato is his vision of social justice and responsibility. The 40,000 motors for the convenience store chain are being produced by a group of small manufacturers in Ohta-ku and Bunkyo-ku, in the inner north of Tokyo — which is becoming a regional rust belt. Minato is seized with the vision of reinvigorating these small workshops that until the 80s were the bedrock of Japan's manufacturing and economic miracle. Their level of expertise will ensure that the quality of the motors will be as good as those from any major company.



International prep

Despite his plan to do things domestically first, Minato is well prepared for the international markets. He is armed with both six years of living and doing business in Los Angeles in the early 90s — and with patent protection for over 48 countries. His is hardly a provincial perspective.

His US experience came after playing the piano for a living for 15 years. He began tinkering with his invention in the mid-70s. The idea for his magnetic motor design came from a burst of inspiration while playing the piano.

But Minato decided to drop everything in 1990 to help his daughter Hiroko, who at the age of 20 decided that she wanted to be a rhythm and blues star



in the US. Minato is a strong believer in family: If Hiroko was going to find fame and fortune in the US, Dad had better be there to help manage her. He succeeded in helping Hiroko to achieve a UK dance chart number one hit in 1995.

In 1996 Minato returned to Japan and his magnetic motor project. The following year he displayed his prototypes to national power companies, government officials and others at a five-day conference in Mexico City. Interest was palpable, and Minato realized that his invention might meet a global need for energy-saving devices.

Subsequent previews and speeches in Korea and Singapore further consolidated his commitment to bringing the invention to fruition, and he was able to bring in several early-stage investors.

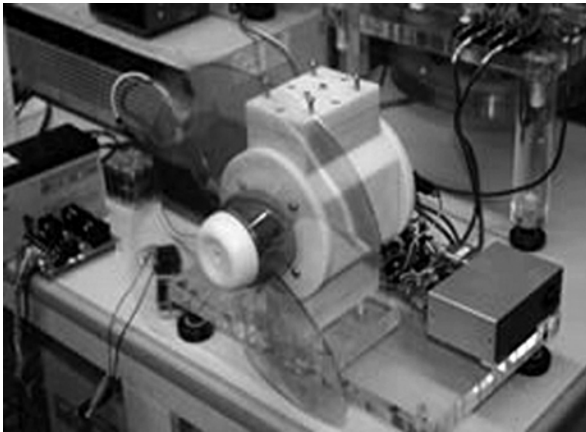
During the late 90s, Minato continued to refine his prototypes. He also stayed in constant contact with his lawyer, registering patents in major countries around the world. Through his experiences in the US he realized that legal protection was critical, even if

it meant delaying release of the technology by a couple of years.

Ironically, by the time he'd won patents in 47 countries, the Japanese patent office turned him down on the grounds that "[the invention] couldn't possibly work" and that somehow he was fabricating the claims.

But a few months later they were forced to recant their decision after the US patent office recognized his invention and gave him the first of two patents. As Minato notes: "How typical of Japan's small-minded bureaucrats that they needed the leadership of the US to accept that my invention was genuine."

By 2001, the Minatos had refined their motors and met enough potential investors to enter into a major international relationship, initially with a Saudi com-



pany, to be followed thereafter by companies in the US and elsewhere.

However, fate dealt the investors and Minato's business a serious blow when the World Trade Center was attacked in New York. The Saudis retreated, and Minato's plans fell back to square one.

Now Minato is once again ready to move. With the first order in the works and more orders pending successful prototypes, he has decided that investors don't have to be primary partners. He is actively accepting inquiries from corporate investors who can bring strategic advantages and corporate credibility with them. His company, Japan Magnetic Fan, will make a series of investment tie-up announcements in the first and second quarters of 2004.

Implications

Minato's motors consume just 20 percent or less of the power of conventional motors with the same torque and horse power. They run cool to the touch and produce

almost no acoustic or electrical noise. They are significantly safer and cheaper (in terms of power consumed), and they are sounder environmentally.

The implications are enormous. In the US alone, almost 55 percent of the nation's electricity is consumed by electric motors. While most factory operators buy the cheapest motors possible, they are steadily being educated by bodies like NEMA (National Electrical Manufacturers Association) that the costs of running a motor over a typical 20-year lifespan comprise a purchase price of just 3 percent of the total, and electricity costs of 97 percent. It is not unusual for a \$2,000 motor to consume \$80,000 of electricity (at a price of .06 cents per kilowatt hour).

Since 1992, when efficiency legislation was put into place at the US federal level, motor efficiency has been a high priority — and motors saving 20 percent or so on electrical bills are considered highly efficient. Minato is about to introduce a motor which saves 80 percent, putting it into an entirely new class: The \$80,000 running cost will drop to just \$16,000. This is a significant savings when multiplied by the millions of motors used throughout the USA and Japan — and eventually, throughout the world.

The devices

Minato's invention and its ability to use remarkably less power and run without heat or noise make it perfect for home appliances, personal computers, cellphones (a miniature generator is in the works) and other consumer products.

The magnetic motor will be cheaper than a standard motor to make, as the rotor and stator assemblies can be set into plastic housings, due to the fact that the system creates very little heat. Further, with the motor's energy efficiency, it will be well suited for any application where a motor has limited energy to drive it. While development is



still focused on replacing existing devices, Minato says that his motor has sufficient torque to power a vehicle.

With the help of magnetic propulsion, it is feasible to attach a generator to the motor and produce more electric power than was put into the device. Minato says that average efficiency on his motors is about 330 percent.

Mention of Over Unity devices in many scientific circles will draw icy skepticism. But if you can accept the idea that Minato's device is able to create motion and torque through its unique, sustainable permanent magnet propulsion system, then it makes sense that he is able to get more out of the unit than he puts in in terms of electrical power. Indeed, if the device can produce a surplus of power for longer periods, every household in the land will want one.

"I am not in this for the money," Minato says. "I have done well in my musical career, but I want to make a contribution to society — helping the back-street manufacturers here in Japan and elsewhere. I want to reverse the trends caused by major multi-



nationals. There is a place for corporations. But as the oil industry has taught us, energy is one area where a breakthrough invention like this cannot be trusted to large companies."

Minato was once close to making a deal with Enron. But today, he is firmly on a mission to support the small and the independent — and to go worldwide with them and his amazing machine. "Our plan is to rally smaller companies and pool their talent, and to one day produce the technology across a wide range of fields."

Magnetic rotating apparatus

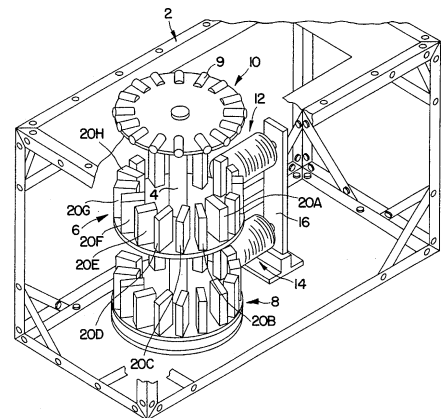
United States Patent □5,594,289

Inventor: Minato, Kohei

Filed: December 14, 1995

Issued: January, 14 1997

On a rotor which is fixed to a rotatable rotating shaft, a plurality of permanent magnets are disposed along the direction of rotation such that the same magnetic pole type thereof face outward. In the same way, balancers are disposed on the rotor for balancing the rotation of this rotor. Each of the permanent magnets is obliquely arranged with respect to the radial direction line of the rotor. At the outer periphery of the rotor, an electromagnet is disposed facing this rotor, with this electromagnet intermittently energized based on the rotation of the rotor. According to the magnetic



rotating apparatus of the present invention, rotational energy can be efficiently obtained from permanent magnets. This is made possible by minimizing as much as possible current supplied to the electromagnets, so that only a required amount of electrical energy is supplied to the electromagnets.

A Thermomagnetic Engine

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The mystic power of permanent magnets has been attracting the attention of inquisitive minds for many centuries. Though many attempts were made to create a perpetuum mobile, which would be based on a permanent magnet, none of them were successful. Such are the laws of nature.

However, by using a permanent magnet coupled with ferromagnetic elements made of modern materials, which have a needed value of the Curie point, we can design and construct a device, which is quite simple in production and interesting from the point of view of the energy conversion process implemented.

The Curie point is a temperature, at which a ferromagnetic material loses its magnetic properties when gets heated. When it happens, the material, in particular, is no more attracted by a magnet and does not conduct its magnetic field. This happens due to the fact that the thermal motion of the atoms of a ferromagnetic material at a temperature equaling the Curie point breaks their combined magnetic alignment.

There are many alloys and pressed magnetic materials, which have different values of the Curie point ranging from several degrees to several hundreds of degrees Celsius.

1. The first variant of using the thermomagnetic engine

A possible design of a thermomagnetic engine is shown in Fig.1.

A thermomagnetic engine comprises a wheel (1), which is free to rotate on the axle (2). A permanent magnet (3) is sit-

uated very close to the wheel. It is expedient to use a permanent magnet, which is made of such a high magnetic inductance material as, for example, Neomax.

The wheel rim (4) is made of a non-magnetic material. Several ferromagnetic elements (5) are mounted on the rim. The number of these elements depends on the wheel's diameter (1) and on the magnetic inductance of the constant magnet used in the construction (3). 16 such ferromagnetic elements are shown in Fig.1. The ferromagnetic material of which they are made of has the Curie point value of about 40–50°C.

The lower part of the wheel (1) is immersed into a hot water; the temperature of which exceeds the value of the Curie point of the elements (5). In the case in question the temperature of the water must be more than 60° C. The level of water is set in such a way that during the rotation of the wheel (1) only the element situated at a minimal distance from the permanent magnet (3) gets immersed into the water.

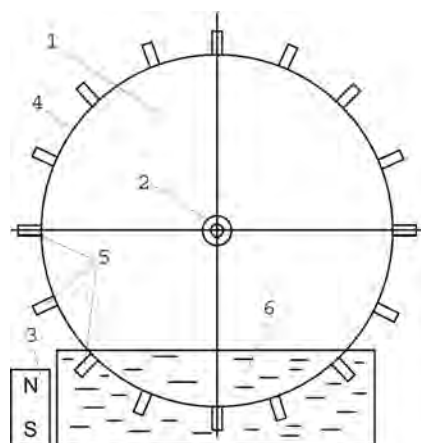


Fig. 1

1. Wheel
2. Wheel axle
3. A permanent magnet
4. Wheel rim
5. An element made of a ferromagnetic material with a value of the Curie point equaling 40–50 °C
6. Hot water

The operation of the device

The attracting force of the permanent magnet (3) influences one of the elements entering the zone of attraction of the magnet. Under the influence of the attraction force the element (5) approaches the magnet. This process is accompanied by the rotation of the wheel (1) on the axle (2). However, when the distance between the ferromagnetic element and the magnet (3) becomes minimal, the ferromagnetic element (5) gets immersed into the hot water (6), gets heated up by the water to the temperature exceeding the value of the Curie point and, due to this, loses its magnetic properties. The element is no more attracted by the magnet (3). This means that the permanent magnet does not influence the ferromagnetic element any more and does not prevent it from moving further.

However, due to the present wheel set-up, the next ferromagnetic element enters the zone of attraction of the permanent magnet (3), which, by attracting the element, causes the wheel to rotate. When the distance between the two elements of the construction also becomes minimal, the process is repeated as described above.

If a ferromagnetic element, which approached the permanent magnet, did not get heated at a precise moment, the permanent magnet would "hold" it. This, in turn, would cause the wheel (1) to stop. The permanent magnet, however, already influences the next ferromagnetic element, attracting it. Thus, the cycle is repeated again and again.

Due to the rotation of the wheel, the ferromagnetic elements, which got immersed into the hot water, later sequentially come out of it, cool down to the temperature lower than the Curie point, regain their ferromagnetic properties and are able to interact with the permanent magnet (3) once again.

In such a way, a continuous wheel rotation is maintained under the influence of the magnetic field of the permanent magnet, which means that the engine performs mechanical work. In order to make the engine work, it is enough to immerse part of it into a hot water. This design is a classical solution of the task. Other solutions are also possible.

2. The second variant of using the thermomagnetic engine

By using permanent magnets and ferromagnetic elements that reach the Curie point at relatively low temperatures, an unexpectedly peculiar and, in some sense, paradox effect can be observed (see Fig.2).

The main feature of the energy system shown in Fig.2 lies in the fact that it consists of two interacting energy cycles – a thermomagnetic cycle and a thermal cycle. These cycles have a specific thermal energy interchange between them.

The energy system consists of a wheel (1), which is free to rotate on the axle (2). A permanent magnet (3) is mounted close to the wheel. Several ferromagnetic elements (4) are mounted on the wheel rim (1) made of a non-magnetic material. Eight such elements are shown in Fig.2.

This part of the scheme shown is similar to the construction of a thermomagnetic engine considered above. However, it has several sharp distinctions. The present scheme comprises a burner (5), in which fuel is combusted (gas, fuel oil, coal or other types of fuel), which is intended to heat the water. Hot combustion products come through the guiding apparatus (6), which directs the jet of hot gases only to the ferromagnetic element (4), which is the closest to the permanent magnet (3) and which is the only one that gets heated.

Then the jet of hot combustion products is directed to the heat exchange device (7), for example, into a

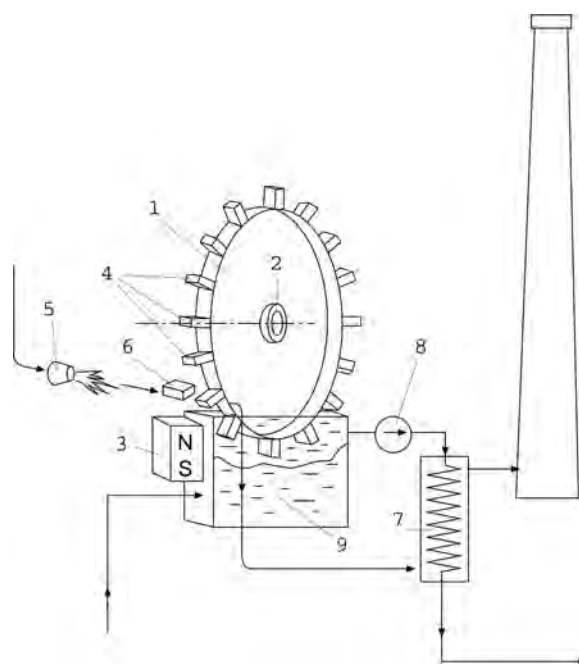


Fig.2

1. Engine wheel
2. Wheel axle
3. Permanent magnet
4. Ferromagnetic elements
5. Burner
6. Control apparatus
7. Heat-exchange device
8. Pump
9. Open-type heat exchanger

hot-water boiler, where it heats the water processed by the pump (8).

In this energy system the heated water is first directed through an open-type exchanger (9), into which the lower part of the wheel (1) with the ferromagnetic elements (4) mounted on the rim gets immersed during the rotation. The elements directly contact the heated water.

It is worth mentioning that the proposed energy system serves to illustrate the general principle of interaction of thermomagnetic (magnetic-mechanical) and thermal cycles in different energy systems. Other source of heat can also be used for heating the ferromagnetic elements; it can also be used not only to heat water, but for other purposes. Not only the whole jet can be used for heating ferromagnetic elements but part of it as well. In order not to overload the scheme with minor elements, the whole jet is shown in the picture.

The working scheme

The permanent magnet (3) acts on a ferromagnetic element, which enters the zone of its influence, attracted by the magnet. Under the influence of the attraction force, the ferromagnetic element (4) moves to the permanent magnet and rotates the wheel (1). When the distance between the element (4) and the magnet (3) becomes minimal, the element enters the hot jet of combustion products, created by the guiding apparatus that burns the fuel in the burner (5). In this jet of hot combustion products a ferromagnetic element (4) is heated up to the temperature exceeding the Curie point and due to this loses its ferromagnetic properties.

After part of the heat is spent on heating the elements (4), a jet of hot gases is directed into the heat exchange device (7) to heat up the water. The permanent magnet (3) does not influence the heated element (4), which means that it neither attracts the element nor "holds" it.

However, with such a position of the wheel (1) the next ferromagnetic element (4) enters the zone of attraction of the permanent magnet (3). The element approaches the magnet and, by rotating the wheel (1), also enters the jet of hot combustion products, gets heated by the jet and, as a result, loses its ferromagnetic properties. By this moment the permanent magnet already influences the next ferromagnetic element (4) by attracting it. The ferromagnetic elements heated up by the hot combustion products lose their magnetic properties and pass by the magnet (3), which does not influence them. Then the ferromag-

netic elements get immersed into the water, first heating it up. The process of cooling the elements takes place. They regain their ferromagnetic properties, which enables them interact with the permanent magnet on the rotation of the wheel (1).

The water partially heated up in the open-type heat exchanger (9) is directed through the heat exchange device (7) by the pump (8), where it gets heated up by the hot jet of combustion products up to the design temperature. Then the water is supplied to the consumer.

Thus, two energy cycles are present in the proposed scheme:

1. A thermomagnetic cycle, in which mechanical energy is generated.
2. A thermal cycle, in which the water is heated up for consumers to use.

The peculiarity of this scheme lies in the fact that the heat needed to heat up the ferromagnetic elements in the thermomagnetic cycle comes from the thermal cycle. During heating up the elements, a phase transformation takes place when they lose their magnetic properties. The heat spent to heat them up, however, does not get dispersed, but is transformed into another type of energy and right away is directed back to the thermal cycle, where it is traditionally used to preliminarily heat up the water practically without any losses. The heat is taken as though on credit.

Strange as it may seem, but this short-term transfer of heat from the thermal cycle to the thermomagnetic cycle and vice versa provides the mechanical operation of the thermomagnetic engine practically without any additional consumption of thermal or any other types of energy. Almost a really operating perpetuum mobile was built!

It is natural that the temperature of hot gases after the ferromagnetic elements have been heated up will fall. But in most cases the heat exchange in the heat exchange device can be maintained at the existing level by correcting the heat exchange area. In addition, the water enters the heat exchange device 7 partially heated up.

As it can be seen from Fig.2, a new feature has been introduced to the design of the engine: the thermal energy is passed from one cycle to another in order to perform a certain function and then is returned back.

A question arises: by means of what process does this thermomagnetic engine work if during the operation it uses the heat from the thermal cycle, but then right away returns it to the same thermal cycle?

News From the Region of Voronej City, Russia by the VORONEJ-MEDIA Media Agency

A seminar on the problems of alternative energy organized by Dutch specialists was held in Voronej City. An open seminar on the problems of alternative energy was held by Dutch specialists in the main building of Voronej State University on January 28, 2004.

Evgenia Dubrovina, a member of the press service of the Voronej regional branch of the Ecozaschital (Ecoprotection) Organization, reported to a correspondent of the Voronej-Media News Agency that this is the first time that representatives of the Dutch OVI Organization, which promotes the use of alternative energy sources, have come to Voronej. This non-governmental organization, is part of the global Invors system, a worldwide network of organizations fighting for environmentally friendly energy consumption. The aim is to replace fossil fuels and nuclear energy with alternative sources of ener-

gy and to exclude the former from energy policy. This is even more critical because the prognosis is that, the main oil resources will be exhausted by the year 2050. Udite Saleski and Ann Bir Vikkelsoe reported on the possibility of a transition to renewable energy sources, on the problems of energy efficiency and energy consumption. They also showed, how their ideas are becoming a reality in Denmark. Renewable energy sources, for example, constitute 10 % of all power consumption in Denmark. In particular, wind energy sources are officially recognized and included in the list of electricity rates.

Armenia Plans Building Its First Wind Power Station

The ARKA News Agency quotes the deputy minister of energy of the Armenian Republic as saying that the country's first wind power station with an output of 1.9 MW may be built this year.

The station is to be constructed as part of an overall program to build wind power stations in Armenia. This program will be partially supported by the Iranian government. Areg Galstian notes that the minimal economically justifiable potential of Armenian wind energy amounts to 450 MW, which makes it possible to produce up to 1 billion kW/h of electricity per year.

According to A.Galstian, a 50 MW wind power station is planned to be

built on the banks of Sevan Lake. Investment in wind power engineering, in particular, is made feasible by a rise in rates for electricity generated at wind power stations from five to seven cents per kW/h. At the same time, the deputy minister stressed that alternative energy sources cannot fully replace the Armenian APP. Though alternative energy increases the level of failsafety of an energy system, its dependence on the seasons can negatively influence the energy balance.

A System of Effective Energy Conversion

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People are constantly dealing with various types of energy conversion, transforming chemical energy into thermal energy, thermal into mechanical, mechanical into electrical; the latter is then transformed into all other types of energy. The transformation of energy in order to accumulate it for further usage is particularly crucial. However, all these energy transformations are accompanied by losses, which is no wonder. The surprising thing is that processes of energy transformation generating an unusual effect are possible.

In order to explain the essence of this effect, let us consider the energy diagram given below, in which a wind motor generates electricity. In this case, electricity is generated when the wind blows but not necessarily when energy is needed. That is why it is essential to find an effective method of accumulating it.

One possible method of accumulating electric energy is to decompose water by means of electrolysis into oxygen and hydrogen. This is performed in an electrolyzer by the electric current which passes through it. The oxygen and hydrogen obtained are fed into reservoirs, where they are accumulated. If there is a need for electric energy, both oxygen and hydrogen are fed to the gas turbine, where they are burned. This generates heat, which is, in turn, transformed into the mechanical energy of the turbine rotor rotation and of the electric generator connected to the turbine, which generates electric energy during the process. The amount of electric energy generated in this scheme is obviously determined by the volume of hydrogen burned and the amount of heat released, that is by its caloric value.

However, if we change the present scheme, it will obtain some new and unexpected qualities. The peculiarity of this new, adjusted scheme lies in the fact that the electrolytic decomposition of water into hydrogen and oxygen is performed under pressure. The simplest way to decompose water using this method is to immerse the electrolyzer deep down into the water (see Fig.1).

Deep in the water, additional pressure is created by means of overlying sheets of water. This pressure influences the oxygen and hydrogen, which are obtained through the electrolysis of water, by compressing them.

If an electrolyzer is immersed into the water down to a depth of 10 meters, the pressure of both hydrogen and oxygen received by means of the electrolytic decomposition of water will amount to 0.1 MPa (1 Atmosphere). If we immerse an electrolyzer down to a depth of 100 meters, the pressure at this level will be 1 MPa (10 Atmospheres). The pressure of the oxygen and hydrogen obtained will be the same.

If an electrolyzer is immersed down to a depth of 1000 meters, the water pressure at this depth and, consequently, the pressure of the hydrogen and oxygen obtained will be 10 MPa (100 Atmospheres). When an electrolyzer is immersed down to a depth of 5 kilometers, the pressure inside it will reach a value of 50 MPa (500 Atmospheres). The pressure of the oxygen and hydrogen obtained will be the same.

Thus, oxygen and hydrogen obtained by means of electrolytic decomposition of water under high pressure have the same pressure since they are compressed, which means that they possess not only chemical energy, which is released during combustion not only in the form of heat but as the

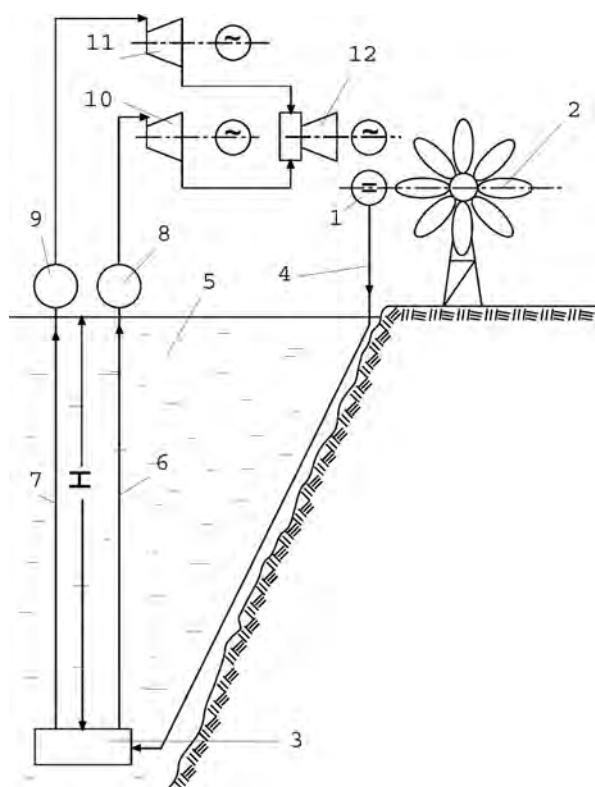


Fig. 1

potential energy of a compressed gas. Besides, the potential energy of the compressed gas is created only because the electrolytic decomposition of the water is performed at the bottom level, that is, by means of the pressure of the water above the electrolyzer.

The transformation scheme will be described below proceeding from Fig. 1

The electric energy used in this scheme of energy transformation can be generated, for example, by the electric generator 1 of a wind motor 2. Electricity is fed to the electrolyzer 3 via the cable 4. The electrolyzer 3 is situated in a water-storage reservoir 5. The level «H», to which the electrolyzer is immersed, can range from just a few meters to several kilometers.

The water is decomposed by the electrolyzer 3, to which a direct electric current is fed. Oxygen and hydrogen are created separately in two different chambers of the electrolyzer; that is why they do not get mixed.

The water which gets decomposed in the electrolyzer is received directly from the water storage reservoir, into which the electrolyzer is immersed. In order to exclude the possibility of the hydrogen and oxygen dissolving in the water, the latter

is fed under high pressure to the active zone of the electrolyzer in strictly limited portions via narrow channels. Only that part of the proportioned water in which the gases have partially dissolved gets decomposed by means of electrolysis. The oxygen and hydrogen which have been formed in the electrolyzer are compressed by the «H» head of water to the corresponding pressure. Then they are fed to the reservoirs 8 and 9 via the separate pipes 6 and 7, where they are accumulated under pressure, which is equal to the pressure inside the electrolyzer.

The hydrogen and oxygen are fed from the reservoirs into the turbines 10 and 11. The turbine 10 operates on compressed hydrogen, while the turbine 11 works on compressed oxygen. In these turbines the potential energy of the compressed gases, hydrogen and oxygen, is transformed into the mechanical energy of rotation of the turbine rotors and electric generators, which are connected to them and which generate electric energy. In other words, an excess pressure of hydrogen and oxygen in the setting of the turbines 10 and 11 is created, due to which the rotors of the turbines and the electric generators rotate, generating electric energy. This is a new, additional cycle, in which extra electric energy is generated.

After the excess pressure acts on the turbines 9 and 10, the oxygen and hydrogen are fed into the combustion chamber of the gas turbine 12, where they are burned. This creates heat, which is transformed into the mechanical energy of rotation of the turbine rotors 12 and the electric generator, which generates electricity. This is a traditional cycle.

It is noteworthy that when oxygen and hydrogen are burned, heat energy is created, which is equivalent to the electrical energy spent to decompose the water by means of electrolysis, that is, on receiving the amount of oxygen and hydrogen obtained, while the electric energy, which is generated due to the expansion of the compressed oxygen and hydrogen in the turbines 10 and 11 will be additional. It is interesting that this additional energy is generated only when the electrolyzer is immersed deep into the water. Moreover, the deeper the electrolyzer is immersed, the more additional energy is generated.

In this scheme, the use of compressed hydrogen and oxygen was taken as an example. Other versions of a technological scheme using compressed hydrogen and oxygen are also possible.

The main idea of this scheme is to show the possibility of obtaining hydrogen and oxygen in a com-

pressed state, in which they possess additional potential energy, during electrolytic decomposition of water.

The pressure acting on the electrolyzer can be created using another method, for example by a pump or the head of water in a tube. In this article, a scheme is given, in which the pressure of the water acting on the electrolyzer is conditioned by a sheet of water in the water-storage reservoir. This pressure is obtained fairly easily and practically without any losses. In order to obtain such pressure, the electrolyzer can be immersed in the sea or a lake, or in a water-sealed borehole or mine.

Another source of electric energy for electrolytic decomposition of water can be used as well. In order not to overload the scheme shown in Fig.1, the following secondary elements have been skipped: the valves, the instrumentation, and the means for technological protection and blocking, which energy installations are usually equipped with.

Conclusion:

The electrolytic decomposition of water, into which an electrolyzer is immersed, makes it possible to decompose the water and obtain hydrogen and oxygen in a compressed state (under pressure). This means that energy can be obtained from the compressed oxygen and hydrogen in two cycles:

Cycle 1

In this cycle, energy can be obtained by a traditional method, which is a simple burning of these gases during their chemical combination.

Cycle 2

Energy can also be obtained when the excess pressure of oxygen and hydrogen snap into action in turbo-generators. The generation of this additional energy is conditioned only by the fact that the electrolytic decomposition of water is performed in an electrolyzer immersed deep into the water. The deeper the electrolyzer is immersed, the more potential energy is accumulated in the compressed oxygen and hydrogen.

News from Professor Kanarev

On March 25 we received an article from Professor Kanarev, which contained a test report on the cell of a hydroelectric heat generator. These tests were performed by the author together with representatives of the SITIS Ltd Company (Sarov), who expressed their will to acquire a production license for the cell being tested.

A scheme of the experimental installation is shown in Fig. 1.

According to voltmeter and ammeter readings, the efficiency amounts to about

36:1. According to ASK-2022 oscillograph readings, the efficiency is even higher, totaling 106:1. According to the PCS500A oscillograph, the efficiency is about 68:1.

Thus, Professor Kanarev believes that inside his installation electric energy is transformed by the cell of a hydroelectric heat generator into heat energy with energy efficiency of more than 50.

You may contact Professor Kanarev by sending him an e-mail at the following address: kanphil@mail.kuban.ru.

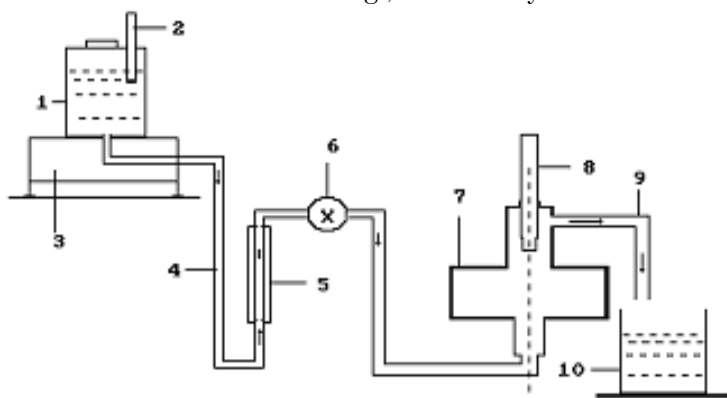


Fig. 1.

A scheme of the experimental installation:

- 1 - reservoir for solution;
- 2 - thermometer;
- 3 - electric scales;
- 4 - channel for solution feeding;
- 5 - rotameter; 6 - solution feed regulator;
- 7 - hydroelectric heat generator cell (currently being patented);
- 8 - thermometer;
- 9 - drain for heated solution;
- 10 - receiving reservoir

U.S. Will Give Cold Fusion Second Look, After 15 Years

By **KENNETH CHANG**,
New York Times, March 25, 2004

<http://query.nytimes.com/mem/tnt.html?tntget=2004/03/25/science/25FUSI.html&tntemail1>

Cold fusion, briefly hailed as the silver-bullet solution to the world's energy problems and since discarded to the same bin of quackery as paranormal phenomena and perpetual motion machines, will soon get a new hearing from Washington.

Despite being pushed to the fringes of physics, cold fusion has continued to be worked on by a small group of scientists, and they say their figures unambiguously verify the original report, that energy can be generated simply by running an electrical current through a jar of water.

Last fall, cold fusion scientists asked the Energy Department to take a second look at the process, and last week, the department agreed.

No public announcement was made. A British magazine, *New Scientist*, first reported the news this week, and *Dr. James F. Decker*, deputy director of the science office in the Energy Department, confirmed it in an e-mail interview.

"It was my personal judgment that their request for a review was reasonable," *Dr. Decker* said.

For advocates of cold fusion, the new review brings them to the cusp of vindication after years of dismissive ridicule.

"I am absolutely delighted that the D.O.E. is finally going to do the right thing," *Dr. Eugene F. Mallove*, editor of *Infinite Energy* magazine, said. "There can be no other conclusion than a major new window has opened on physics."

The research is too preliminary to determine whether cold fusion, even if real, will live up to its initial billing as a cheap, bountiful source of energy, said *Dr. Peter Hagelstein*, a professor of electrical engineering and computer science at the Massachusetts Institute of Technology who has been working on a theory to explain how the process works. Experiments have generated small amounts of energy, from a fraction of a watt to a few watts.

Still, *Dr. Hagelstein* added, "I definitely think it has potential for commercial energy production."

Dr. Decker said the scientists, not yet chosen, would probably spend a few days listening to presentations and then offer their thoughts individually. The review panel will not conduct experiments, he said.

"What's on the table is a fairly straightforward question, is there science here or not?" *Dr. Hagelstein* said. "Most fundamental to this is to get the taint associated with the field hopefully removed."

Fusion, the process that powers the Sun, combines hydrogen atoms, releasing energy as a byproduct. In March 1989, *Drs. B. Stanley Pons* and *Martin Fleischmann*, two chemists at the University of Utah, said they had generated fusion in a tabletop experiment using a jar of heavy water, where the water molecules contain a heavier version of hydrogen, deuterium, and two palladium electrodes. A current running through the electrodes pulled deuterium atoms into the electrodes, which somehow generated heat, the scientists

said. Dr. Fleischmann speculated that the heat was coming from fusion of the deuterium atoms.

Other scientists trying to reproduce the seemingly simple experiment found the effects fickle and inconsistent. Because cold fusion, if real, cannot be explained by current theories, the inconsistent results convinced most scientists that it had not occurred. The signs of extra heat, critics said, were experimental mistakes or generated by the current or, perhaps, chemical reactions in the water, but not fusion.

Critics also pointed out that to produce the amount of heat reported, conventional fusion reactions would throw out lethal amounts of radiation, and they argued that the continued health of Drs. Pons and Fleischmann, as well as other experimenters, was proof that no fusion occurred.

Some cold fusion scientists now say they can produce as much as two to three times more energy than in the electric current. The results are also more reproducible, they say. They add that they have defi-

nately seen fusion byproducts, particularly helium in quantities proportional to the heat generated.

After a conference in August, Dr. Hagelstein wrote to Energy Secretary *Spencer Abraham*, asking for a meeting. Dr. Hagelstein; *Dr. Michael McKubre* of SRI International in Menlo Park, Calif.; and *Dr. David J. Nagel* of George Washington University met Dr. Decker on Nov. 6.

"They presented some data and asked for a review of the scientific research that has been conducted," Dr. Decker said. "The scientists who came to see me are from excellent scientific institutions and have excellent credentials."

Scientists working on conventional fusion said cold fusion research had fallen off their radar screens.

"I'm surprised," *Dr. Stewart C. Prager*, a professor of physics at the University of Wisconsin, said. "I thought most of the cold fusion effort had phased out. I'm just not aware of any physics results that motivated this."

U.S. Department of Energy Will Review 15-Years of "Cold Fusion" Excess Heat and Nuclear Evidence

From: **New Energy Foundation, Inc.**, March 20, 2004
www.infinite-energy.com

Exciting news that has circulated for about a month in the low-energy nuclear reactions field (LENR, a.k.a. "cold fusion") has now been confirmed. The DoE has agreed to perform a review of the entire "cold fusion" (LENR) question. The U.S. Department of Energy has made a startling reversal of its past refusal to evaluate with a fresh look the large body of experimental evidence that now supports highly anomalous non-chemical magnitude excess heat phenomena in some hydrogen systems, plus associated nuclear anomalies. The details of how the review will be conducted and when it is to begin have not yet been released formally, but it is expected to be completed by the end of 2004.

Technical Assistance Needed (request from Faraday Lab)

Our laboratory is looking for partners (subcontractors) who can help us accomplish the following technical tasks:

1. We need to produce a 1-3 mm wide dielectric film or a plate having dielectric permittivity gradient varying with the thickness (the value of permittivity must range from 1 to 8 or from 1 to 100). The function for changing the dielectric permittivity is defined as a square or a fourth power of the distance. The surface area of this sample must not be less than 50-100 square cm.

2. We need to produce a bimetallic copper-aluminum alloy in the form of bars (10 pieces) having a diameter of 3-5 mm and a length ranging from 50 to 100 mm.

The concentration of one of the metals should be inversely proportional to the concentration of the other metal. Thus, a bar will represent a 50/50 alloy in its center, while at the ends it will consist of 100% copper and 100% aluminum.

Regarding present contracts and other cooperation, please contact us. Tel/fax: +7-812-380-3844 or by e-mail: office@faraday.ru

Alexander V. Frolov, Faraday Lab Ltd, Russia

Life After The Oil Crash

Matt Savinar

Excerpt from: *The Oil Age is Over: What to Expect as the World Runs Out of Cheap Oil, 2005-2050.*

<http://www.lifeaftertheoilcrash.net/>

While I am about the world's biggest advocate for "New Energy" technologies such as Cold Fusion, and Zero Point, my optimism about their ability to help us cope with oil depletion is guarded.

While New Energy has some extremely exciting possibilities, the unfortunate reality is that as I write this, we get absolutely zero percent of our energy from these sources, and we have no functional prototypes. If you would like to learn more, I encourage you to look through Infinite Energy Magazine (<http://www.infinite-energy.com/>) or read Dr. Eugene Mallove's article, *Universal Appeal for Support for New Energy Science*.

So are these alternatives useless?

No, not at all. Whatever civilization emerges after the crash will likely derive a good deal of their energy from these technologies.

While traditional alternatives such as solar and wind are certainly worth investing in, they are in no way the magic bullets they are so often advertised as.

The following is an excerpt from Professor Richard Heinberg's book, *The Party's Over: Oil, War, and the Fate of Industrial Civilizations*, in which he explains why the notion that "All we have to do is switch to solar, wind, etc. ..." is delusional in its' simplicity:

Clearly, we will need to find substitutes for oil. But an analysis of the current energy alternatives is not reassuring.

The hard math of energy resource analysis yields an uncomfortable but unavoidable prospect: even if efforts are intensified now to switch to alternative energy sources, after the oil peak industrial nations will have less energy available to do useful work - including the manufacturing and transporting of goods, the growing of food, and the heating of homes.

To be sure, we should be investing in alternatives and converting our industrial infrastructure to use them. If there is any solution to industrial societies' approaching energy crises, renewables plus conservation will provide it. Yet in order to achieve a smooth transition from non-renewables to renewables, decades will be needed - and we do not have decades before the peaks in the extraction rates of oil and natural gas occur.

Moreover, even in the best case, the transition will require the massive shifting of investment from other sectors of the economy (such as the military) toward energy research and conservation. And the available alternatives will likely be unable to support the kinds of transportation, food, and dwelling infrastructure we now have; thus the transition will entail an almost complete redesign of industrial societies.

Movement from nothing

Philip BALL

An excerpt from Nature magazine, Feb. 2004

<http://www.nature.com/Physics/>

Empty space can set objects in motion, a physicist claims. Motion can be conjured out of thin air, according to a physicist in Israel.

Alexander Feigel of the Weizmann Institute of Science in Rehovot says that objects can achieve speeds of several centimetres an hour by getting a push from the empty space of a vacuum.

No one has yet measured anything being set in motion by emptiness. But Feigel thinks it should theoretically be possible to make use of the effect to shunt tiny amounts of liquids around on a lab chip, for example. Such small-scale experiments could be useful for chemists interested in testing thousands of different drugs at the same time, or for forensic scientists who need to do analyses on tiny amounts of material.

The whole idea of getting movement from nothing sounds like a gift to advocates of perpetual-motion machines. But there's nothing in Feigel's theory that violates the fundamental laws of physics, so this doesn't provide a way to cheat the Universe and get free energy.

Instead, Feigel draws on the well-established notion that empty space does contain a little bit of energy. This 'vacuum energy' is a consequence of the uncertainty principle — one of the cornerstones of quantum mechanics.

Because of the uncertainty principle, subatomic particles or photons can appear spontaneously in empty space — provided that they promptly vanish again. This constant production and destruction of 'virtual particles' in a vacuum imbues the vacuum with a small amount of energy.

Moving in a Vacuum

Feigel considered the effects of virtual photons on the momentum — a property

defined as mass multiplied by velocity — of objects placed in a vacuum, and came to a surprising conclusion.

He started with the fact that electrical and magnetic forces between objects are mediated by photons that flit between them. So an object placed in strong electric and magnetic fields can be considered to be immersed in a sea of these transitory, virtual photons.

Feigel then showed that the momentum of the virtual photons that pop up inside a vacuum can depend upon the direction in which they are travelling. He concludes that if the electric field points up and the magnetic field points north, for example, then east-heading photons will have a different momentum from west-heading photons.

So the vacuum acquires a net momentum in one direction — it's as though the empty space is 'moving' in that direction, even though it is empty.

It is a general principle of physics that momentum is 'conserved' — if something moves one way, another thing must move the other way, as a gun recoils when it shoots a bullet. So when the vacuum acquires some momentum from these virtual photons, the object placed within it itself starts to move in the opposite direction.

Feigel estimates that in an electric field of 100,000 volts per metre and a magnetic field of 17 tesla — both big values, but attainable with current technology — an object as dense as water would move at around 18 centimetres per hour.

References

1. Feigel, A. Quantum vacuum contribution to the momentum of dielectric media. *Physical Review Letters*, 92, 020404, doi:10.1103/PhysRevLett.92.020404 (2004).

Vortex Heat Generators

Reviewed by **N. OVTCHARENKO**

(New Energy Technologies)

Editor: this review is based on the information extracted from various Internet sources

This article considers the history of creating vortex heat generators, their main working principles and also the main operating parameters of vortex heat generators which are currently produced by Russian companies.

The history of vortex heat generators traces its roots back to the 1920-s, when Josef Ranque, a French engineer, came up against an unexpected phenomenon while investigating the properties of a vortex, artificially created inside a vortex tube, a device which he had designed. What puzzled him was that, as it came out of the vortex tube, the compressed jet of air separated into two streams: a hot one and a cold one.

Research in this field was continued by a German inventor, Robert Hilsch, who in the 1940s modified the Ranque vortex tube by increasing the temperature difference of the air streams coming out of the tube. However, neither Ranque nor Hilsch managed to theoretically substantiate this phenomenon, which postponed its practical application for many decades. It is worth mentioning that no satisfactory theoretical substantiation of the Ranque-Hilsch effect from the point of view of classical aerodynamics has not yet been found.

Alexander Merkulov, a professor at Samara State Aerospace University, was the first to come up with the idea of using a liquid inside the Ranque tube. It was he who laid the foundation for a new theory. The Research Laboratory for Studying Heat-Engines and Refrigerating Machines, founded by Merkulov in the late 1950s, at that time conducted extensive research on the essence of the vortex effect. The idea to use water inside a vortex tube instead of compressed air was a revolutionary

one, since water, unlike gas, cannot be compressed. Consequently, the separation of the streams into a cold and a hot one was not expected.

But the result was astonishing: the water, while running through the volute, was heated up, and very quickly (with an efficiency exceeding unity). Merkulov found it difficult to explain such an anomalous result. In some researchers' opinion, an anomalous increase of the temperature of a liquid is caused by micro-cavitation processes, namely by the collapse of micro-cavities (bubbles) filled by a gas or steam, which appear during the rotation of water inside a cyclone device. Since scientists were unable to explain such a high efficiency from the point of view of the traditional schools of Physics, vortex heat-and-power engineering took its place in the list of pseudo-scientific lines of research.

Meanwhile, the situation came under the notice of some entrepreneurs. This led to the creation of working prototypes of heat and electric generators, using this present principle. Currently, hundreds of vortex heat generators of different capacity are in effective use in Russia, in many former USSR republics and in several foreign countries. Most of them were produced in Russia. Some of these vortex heat generators are considered in the present article.

USMAR Vortex Heat Generators

"USMAR" Ltd, Kishinev, Feredeuluj Str., 4, Moldova, MD-2005

tel: 10 373 22 545043

fax: 10 373 22 540272

e-mail: spotapov@mednet.md

USMAR vortex heat generators were designed by Yuri S. Potapov. In 1995

he founded the USMAR Research and Production Company, which produces vortex heat generators intended to provide heating and hot water supply for households, factories and storage facilities which are situated far from gas pipe-lines and hot-water systems. That USMAR heat generators have an efficiency exceeding unity has been proven by a number of tests.

There are four types of USMAR vortex heat generators (USMAR 1, 2,3 and 4), which differ in their output and productivity. They have an output of 7.5, 17, 32 and 54 kW respectively. Their heat productivity lies in a range of 6,900 to 66,200 kkal/h. The electric motor rotation speed equals 2,900 rot/min for all types, the temperature of the heat carrier (water) being 90° C. The weight of the installations varies from 150 to 400 kg. USMAR heat generators make it possible to heat premises with a maximum volume of 2,500 m³. All the USMAR generators operate in a fully automatic mode. In Moscow, you may get in touch with Potapov by contacting the Rufiko Company. tel:+7 095 268 25 24

NTK Vortex Flowing-Type Thermogenerators

«Noteka-S» Ltd, Dzhukovskogo Str., 1, Dzhukovsky, Moscow region, Russia, 140160

tel: +7 095 556 32 30
fax: +7 095 556 95 04
e-mail: noteka@narod.ru
www.noteka.narod.ru

NTK vortex thermogenerators are produced by the Noteka-S Company, founded in 1998 as an innovation firm, which makes use of the latest developments of Russian scientists in the field of vortex power engineering. In four years, the Noteka-S Company, once a dealer for the Moldavian USMAR Company, has become a company, which has

its own factories as well as laboratories for testing new devices. The Noteka-S Company designs and markets environmentally friendly energy systems based on the principles of alternative vortex power engineering. Local heating systems built on the base of NTK hydraulic vortex heat generators make up the main production of the Noteka-S Company (Fig.1)

The NTK vortex heat generator is intended for transforming the energy of a liquid moving inside it into thermal energy, which is used for heating households, industrial and agricultural buildings, storage facilities and greenhouses in a design range of temperatures. Water is used as the main working fluid when the system is in operation in the central or southern climatic regions, while antifreeze can be used if the NTK is operated in the northern regions of Russia.

There are five types of NTK thermogenerators: NTK 11, NTK 22, NTK 37, NTK 55 and NTK 75. The index in the name of a model indicates the installed capacity of a generator (in kW). The power drawn by installations during the operation is 10, 21, 37, 55 and 75 kW of energy respectively. All the models have an identical electric motor rotation speed of 2900 rot/min. NTK heat generators make it possible to heat premises with a volume of up to 3500 m³. The heat productivity of the NTK 11 heat generator amounts to 8600 kkal/h, while the heat productivity of the NTK 75 thermogenerator equals 65000 kkal/h. NTK thermogenerators work using a higher temperature of the heat carrier (115°C) than the one used in the USMAR heat generators. The weight of the devices varies from 160 to 700 kg. All the NTK thermogenerators operate in a fully automatic mode.

VTG-5 Vortex Heat Generators

RPC «Alternativnije Tehnologii Energetiki i Kommunikatsii» (Alternative Technologies for Energy and Communication), Moscow
tel: +7 095 9770549
fax: +7 095 9155545, 4960136
e-mail: torossa@mtu-net.ru

VTG-5 vortex heat generators are manufactured by the ATEK Research and Production Company and there are twelve models – VTG-5/1...12. The coefficient of transformation of the energy consumed by the generator to thermal energy ranges from 1.9 to 2.4. The ATEK RPC also fills custom orders on developing and producing fuelless quantum vortex thermoelectric power stations, the capacity of which ranges from 50 to 8000 kW.



Fig.1

MUST Vortex Heat Generators

Angstrom Research-and-Production Company,
Bol.Peremerki vill.,
Tver, PO Box 157, Russia, 170017
tel: +7 0822 33 18 44

<http://www.ptechtechnology.ru/MainPart/Energy/Energy7.html>

MUST vortex heat generators (Fig.2) are produced by the Angstrom Research and Production Company, Tver. The MUST heat generator was designed by Rafael I. Mustafaev, a doctor of physical-mathematical sciences, who is also director of Angstrom. The operation principle of the MUST vortex heat generator is based on Mustafaev's invention (Russian Federation patent № 2132517), which makes it possible to obtain heat energy directly from water by influencing the latter mechanically. In this case, the mechanical influence means setting the water in vortex-type motion. The main difference between the MUST generator and heat generators of other types, which also transform electrical energy into heat energy, lies in the fact that power is supplied only to the pump moving the water. The efficiency of transformation of electric energy amounts to 1.2, but can reach a value of 1.5. About a hundred MUST vortex heat generators are currently operating in Russia.

The different models of the MUST heat generator that are produced provide for heating premises with a volume of up to 11,000 m³. The weight of a heat

generator of this type lies in a range of from 70 to 450 kg. The heat productivity of the MUST 5.5 heat generator amounts to 7,112 kkal/h, while the heat productivity of the MUST 37 installation totals 47,840 kkal/h. Water, polyglycol or any other non-freezing liquid can be used as a working medium in the MUST heat generator.

TMG Vortex Thermogenerators

Zavod COMMASH Public Corporation,
Stavskogo Str., 4, Penza, Russia, 440600
Sales department: +7 8412 63 47 08
tel/fax: +7 8412 63 49 39, 63 35 44
<http://www.kommash.itbc.ru/termovihr.htm>

Termovihr Ltd.,
Stavskogo Str., 4, Penza, Russia, 440600
tel: +7 8412 63 38 28
fax: +7 8412 63 39 16
e-mail: termovihr@sura.ru

The TMG vortex thermogenerator is produced at the COMMASH machine-building factory, Penza. The installed capacity of the vortex heat generators produced lies in a range of from 1 to 45 kW. The maximum heated volume is 1,650 m³.

The heat productivity of TMG thermogenerators lies in a range of from 2,000 to 34,800 kkal/h. All the

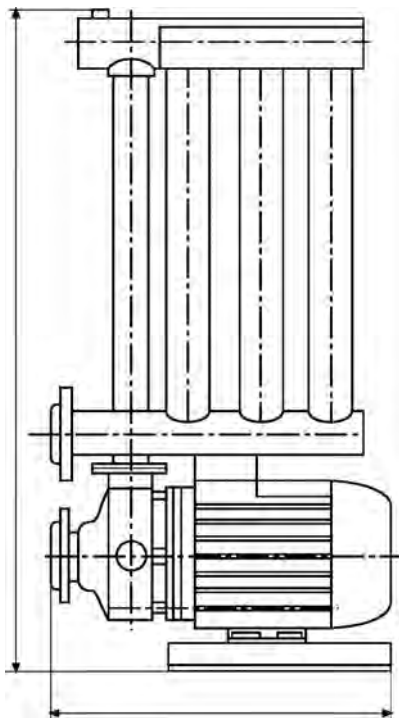


Fig.2



Fig.3

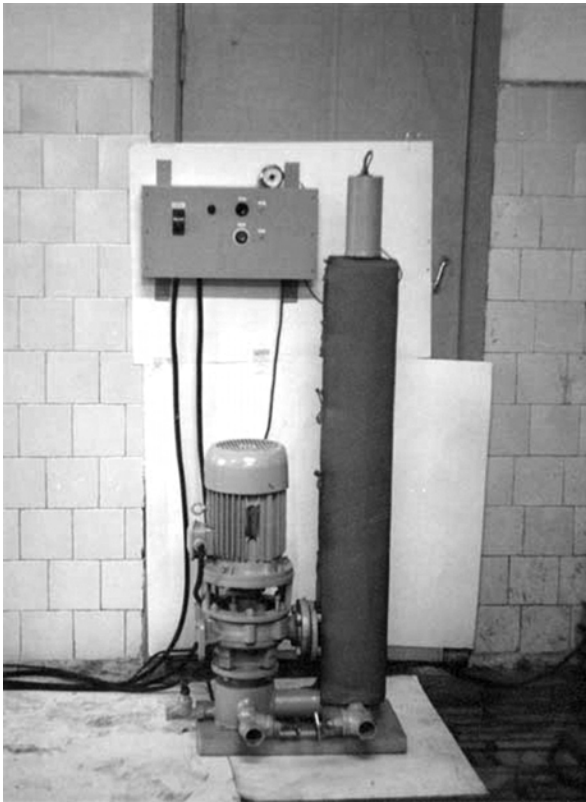


Fig.4
An industrial-type TMG heat generator



Fig.5
A storage-type TMG thermogenerator

thermogenerators of the present type operate in a fully automatic mode. The electric motor rotation speed amounts to 2,900 rot/min and is universal for all the models. TMG heat generators are used as the basis for autonomous heating systems intended for private homes, blocks of apartments, stores, schools, hospitals and other premises. Such systems are most needed in conditions when central heating is not present and building of a gas main is impossible or requires additional financing.

GT Vortex Heat Generators

e-mail: russproduct@nm.ru,
technol@ptechnology.ru

There are five models of GT heat generators: GT 1, 2, 3, 4 and 5. The minimal power of the electric motors of the pumping installation is 0.6 kW (GT 1), and the maximum power equals 180 kW (GT 5). The minimal weight of a heat generator of this type (without the working fluid) is 12 kg, while the maximum weight is 367 kg. The operating temperatures range from 40 to 95°C. The minimal discharge rate of the working liquid during circulation amounts to 3 m³/h, while the maximum discharge rate equals 350 m³/h. The power rating of the GT 1 generator equals 4.85 kW and that of the GT 5 generator is 107.5 kW.

TGV Vortex Heat Generators

Sentr-Les Ltd.,
Moscow, Skladochnaya Str., 1/9
tel: (095) 517 90 80, 771 34 63

TGV vortex heat generators are intended to provide heating and hot water supply for households, as well as public and industrial facilities. The energy efficiency of TGV generators ranges from 1.16 to 1.2, depending on the pump operation mode.

There are six types of TGV vortex heat generators: TGV 3, TGV 5, TGV 7, TGV 11, TGV 22 and TGV 37. The use of this type of vortex heat generators



Fig.6

makes it possible to heat premises with a volume of from 150 to 1,850 m³. The power of the motor used in the TGV 3 model ranges from 3 to 4.5 kW, while the TGV 37 model is powered with a 37 kW motor. The temperature of the working liquid ranges from 65 to 90°C. The maximum volume of the power drawn (by the TGV 37 model) is 22 kW/h. With this amount of power drawn, the heat productivity of the TGV 37 model equals 31,800 kkal/h. All types of TGV vortex heat generators operate in a fully automatic mode.

VITA-15 Vortex Heat Generator

ORBI Management Company, Ltd.,
Mira Blvd., 12, Nijni Novgorod,
Russia 603086

VITA-15 vortex heat generators are produced by the ORBI Company in Nijni Novgorod, Russia. According to Boris Potashnik, director general of the company, 1.35 kW of heat is obtained per 1 kW of the electric energy spent (Birja Plus Svoi Dom newspaper, №42 of 03.11.2003).

Nickolay Petrakov's Cavitation Generator

In one of its issues the "Rossijskaya Gazeta" newspaper published information about an invention made by Nickolay Petrakov, from Altay. He created a super-efficient heating system, which consumes one and a half times less energy than is consumed by the best systems produced in Russia. His invention is based on the effect of cavitation, when water gets heated up very rapidly, almost to the boiling point by means of bubbles, which «collapse» due to the rotation of a pump impeller. This rotation is induced by an electric motor. The genius of Petrakov's in-

vention, which made it possible to dramatically increase the energy efficiency, lies in the original design of inlet and outlet valves.

VIP Vortex Heat Generator

INTERENERGO RESURS Ltd,
Fuchikova Str., 16, 979 01, Rimavska Sobota,
Slovakia

tel.: 00421 47 563 14 32
tel/fax: 00421 47 563 11 44
e-mail: pminter@mail.pvt.sk

VIP heat generators (Fig.7) are produced in Slovakia by the INTERENERGO RESURS Ltd. Company. The installed capacity of these heat generators (in kW) is adjusted according to the requirements specification produced by the customer. The generators are manufactured proceeding from the required parameters of the pump and the electric motor; these fuelless heat generators can have an installed input power ranging from 3 kW to 150 kW. The rate of rotation of the motor shaft is 2,950 rot/min. The electric power drawn is 380V, 50 Hz. The maximum admissible temperature of the heat carrier in a VIP is no more than 95°C. The heat efficiency of the installation is 20 kW. All VIP heat generators operate in a fully automatic mode.

According to Mikhail Pavlovsky, director of the company, VIP heat generators were tested in Donetsk by the "Gazoapparat" Research and Development Institute of Technology in 1996. During these tests a maximum energy efficiency of 155 % was achieved (see Report P-OVA-19/96 on the tests of the fuelless heat generating installation TB-2-6.9 TU U 240070270. 001-96). The device was registered with the State

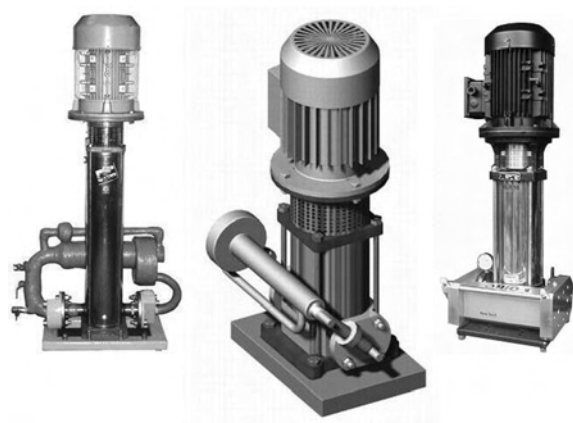


Fig.7

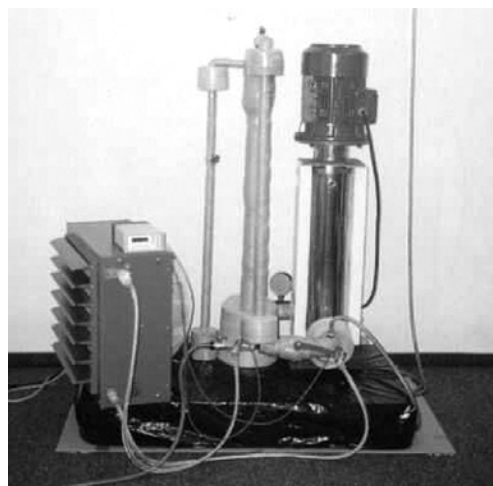


Fig.8

Committee for Standardization and Metrology of Ukraine on 13.06.1996, №086/003488. Tests were also performed in Kiev by the Holod RPA and in Prezviza, Slovakia by the VANSOFT S.R.O Company in 1998. The energy efficiency shown was 126 %.

Pavlovsky asserts that a number of VIP vortex heat generators continue to effectively operate in Kiev at the Holod RPA, where the installation was tested, and also in Donetsk, Kramatorsk, Perevalsk, Poltava, Selidovo, Lugansk, Feodosia (at the Aivazovsky Picture Gallery), in Cherkassy and Dnepropetrovsk.

Editor's Note: The ever-growing competition in the field of new technologies, in particular in the field of designing and manufacturing vortex heat generators, can cause conflicts. G. Ivanenko, the technical director of the Slovakian Interenergoresurs Company, is considered to be the inventor and the main designer of the VIP heat generator. He is known to have worked with Yuri Potapov for a long period of time. However, neither Potapov nor the generators invented by him are mentioned on the web site of the company.

We got in touch with Potapov who told us that, in his opinion, the efficiency of the VIP heat generator does not exceed 95%, though the efficiency declared by the developers is 300%.

We sent an e-mail to Mikhail Pavlovsky, the director general of the Interenergoresurs Company, and soon received a reply from him (also an e-mail), beginning with a critical and cynical quotation from the "Commission of The Russian Academy of Sciences for Fighting Pseudo-Science", which clearly showed where Pavlovsky belongs. He asserts that not only does Yu.S. Potapov not have a single report on tests of his vortex heat generators, the efficiency of which

was announced to exceed unity, but he, in fact, according to Pavlovsky, has never had a patent for such an invention as a "vortex heat generator". Pavlovsky refers to a book by Baziev, the author of the "electrino" theory, in which the latter writes that the efficiency of Usmar heat generators, according to his calculations, was no more than 13%. In this theoretician opinion, the main characteristics of Usmar heat generators are worse than those of heat generators of ordinary design. Pavlovsky also claims that tests of two Usmar heat generators conducted in Kishinev, with the participation of an expert from a Kishinev institute and funded by an interested investor failed: the first heat generator had burnt out even before the test started, while the second one shown an efficiency of just 36%, after which it also broke. Pavlovsky refers to the information that Potapov's devices, as well as their operation, is prohibited by a resolution of the government of Moldova. However, Pavlovsky does not provide the number of the resolution he refers to, as well as the date it was issued.

It is possible that Pavlovsky's problems are caused by the fact that he, having not agreed to buy a license from Potapov, is trying to produce vortex heat generators without understanding the principles of their operation. Thus, proceeding from the facts given above, we come to the conclusion that investors need to conduct a juridical examination, which could help to determine the true patent-holder of the invention titled a «vortex heat generator». Yet, on the other hand, if any inventor creates a specific device, which differs from other devices of the same kind but still uses the principle of the Ranque tube, he has every reason to obtain a patent.

So, it only remains to wish good-luck to the inventors and say: "Do It Yourself"!

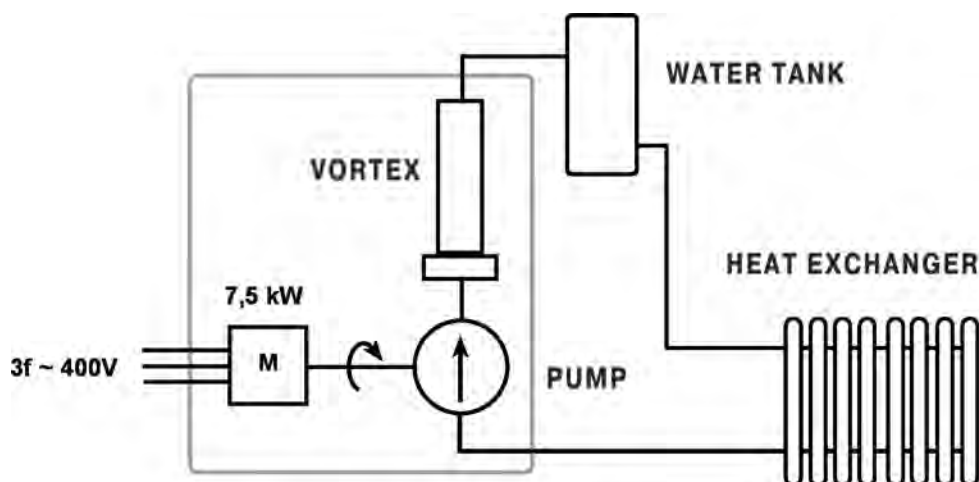


Fig.9

The connection scheme for any heat generator (Generator, Pump, Boiler, Heating system).

A Thermogenerator and a Liquid-Heating Device

Inventor: **Rafael I. MUSTAFAEV**

Patent: RU \square 2132517

Summary

The device is intended for heating a liquid. It can be used in agriculture, by housing and community services and can also be installed in vehicles. In order to provide autonomous hot-water heating, vortex tubes have been introduced to the construction of a thermogenerator. The volute-shaped tubes are connected to the block of accelerators of the liquid. Each volute is equipped with an accelerating plug of a certain size. The volute-shaped tubes also contain braking devices. The liquid-heating device consists of a ther-

mogenerator, a working main-line pump, a flow and a return pipe, each equipped with a shutoff valve, which connects the consumer to the thermogenerator. The latter has a block of liquid accelerators. Injection branch tubes are connected to the block on one of its sides. They comprise a conoid muzzle with a cylindrical section, a throttle and a vortex branch tube with a swirler, all of which are coaxially mounted and rigidly interconnected. A pressure pipeline is connected to the main-line pump, on the opposite side of which a muffler is mounted. The ratio of the muffler arm relative to the place where it is connected to the pressure tube equals 3:5. One of the outputs of the muffler is connected to the upper collector, while the other ones are connected by the injection branch tubes to the block of the accelerator of the liquid. The vortex tubes communicate with the lower collector, which is connected to the flow pipe, while one of the sides of the collector is connected to the pump and, via the side shoe, to the return pipe.

The introduction of the above-listed elements to the construction has made it possible to increase the efficiency coefficient of the installation and to reduce the level of noise and vibrations.

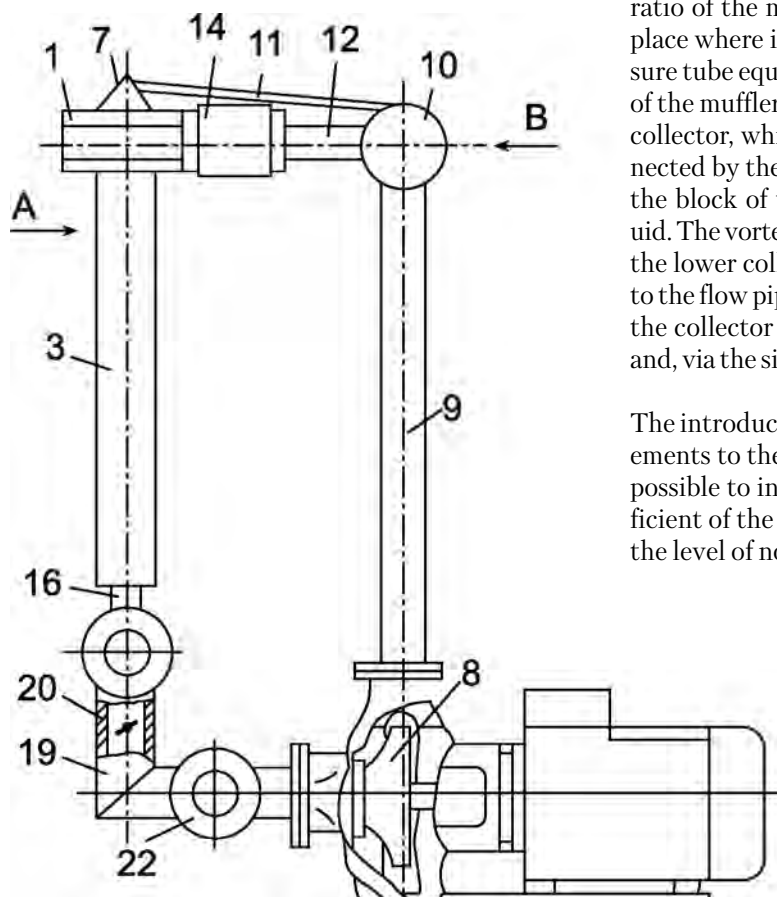


Fig. 1

An Energy Generator: A Differential Planetary Mechanism

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The present article considers a method of generating electric energy by means of centrifugal force, which is created when a rotor is debalanced in a mechanical system.

The essence of the device proposed is reflected in the following description and the diagrams (Fig.1, 2, 3, 4). A crosscut of the proposed device is given in Fig. 1. A crosscut A-A of Fig.1 is given in Fig.2. A crosscut of pos.6 of the detail is given

in Fig. 3. A diagram of the forces acting on the detail (pos.11) is shown in Fig. 4.

The proposed device consists of a shaft with a central wheel 1, the toothing of which is linked with the planetary pinions 2 of equal diameter, which are mounted on the axes 3. They are positioned to let the planet carrier with a shaft 4 freely rotate in the case of the planet carrier. At both ends of the hollows 5 of the case, the rotors with diametrical borings 7 are mounted, and they are free to rotate. The pistons (bodies) 8, which have an initial mass disbalance at the side of their open block wall, are installed in the rotors. These pistons are connected in pairs so as to be easily moved by the flat coupling rods 9 and by the coupling rods

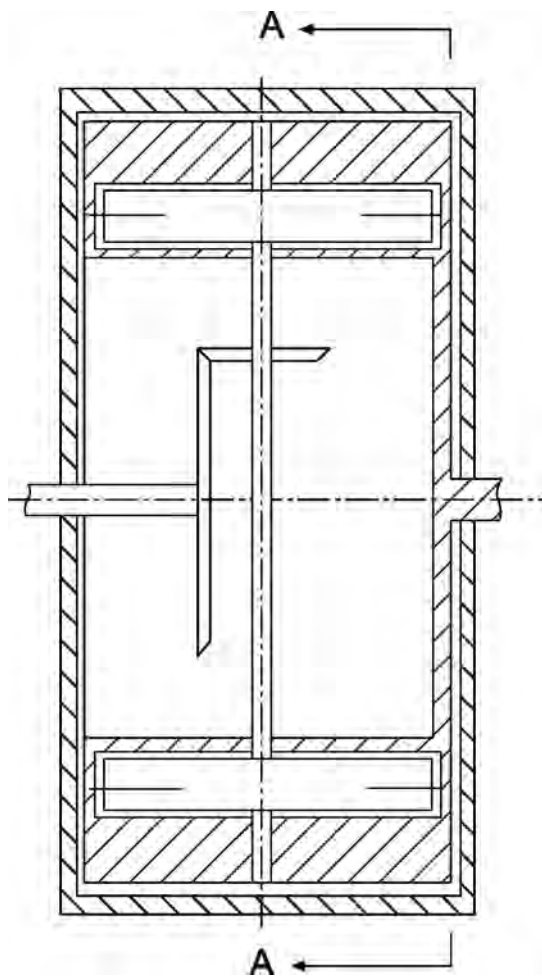


Fig. 1

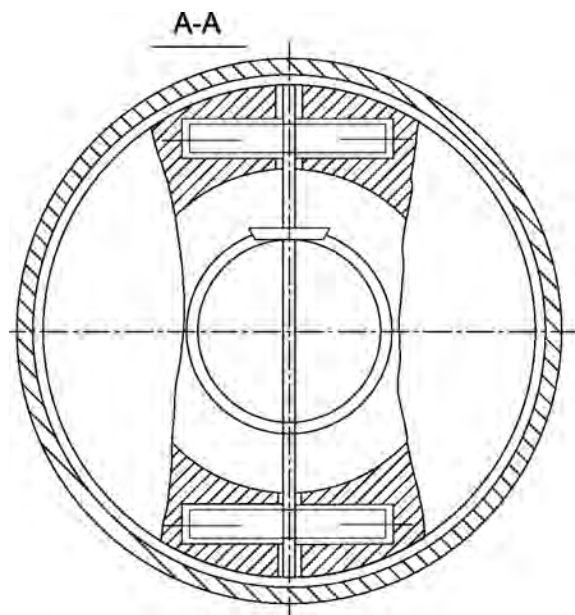


Fig. 2

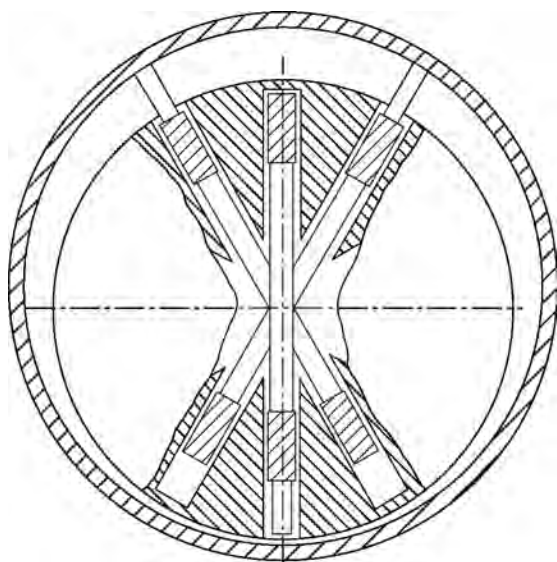


Fig. 3

10, which are in sliding contact at several regions with the inner surface 11 of the hollow 5, the regions of which correspond to both the accelerated and the slowed-down movement of the pistons (bodies) 8 in radial direction.

The device works in the following way. When the shaft with the central wheel 1 are rotated, the planetary pinions 2 with the rotors 6 will rotate in the first place, the

planet carrier 4 being motionless. This happens when the rotor's angular rotation speed reaches a certain design value, influenced by the centrifugal forces at the expense of the initial debalance of the piston masses.

By overcoming the force of friction against the walls of the diametrical borings 7, the pistons will move with acceleration in the radial direction.

In the region 1-2 of the inner surface 11, the coupling rod 10 is not engaged in sliding contact with the surface.

In the region 2-3 of the inner surface 11, the coupling rod 10 gets engaged in sliding contact and the pistons (bodies) 8 move, slowing down in the radial direction.

Both centrifugal and centripetal forces act on the regions 2-3 and 3-4 of the inner surface 11. These forces, when they are decomposed to radial and tangential components, determine the working force, which equals the vector sum of the radial components of all the forces acting in the regions, while the tangential components get balanced since they are counter-directed.

Under the influence of the working force, the case of the planet carrier 4 receives a moment of rotation, and, consequently, starts rotating with the shaft.

Three variants of movement of the central wheel 1 and the planet carrier 4 are possible, depending on the way the inner surface 11 is implemented, which changes the working force.

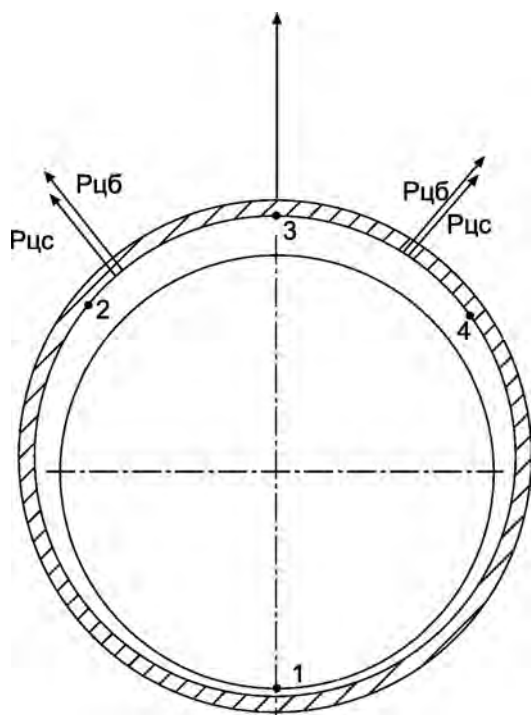


Fig. 4

1. Rotation of the planet carrier 4 and the central wheel 1 takes place in opposite directions. The work of the proposed device is not stable, since if the momentum on the working mechanism increases, thus decreasing the speed of rotation of the planet carrier 4, the speed of rotation of the planetary pinions 2 and the rotor 6 will also diminish, which will lead to a decrease in the working force and braking. In this case, the torque on the working mechanism must be reduced, or the speed of rotation of the central wheel 1 must be increased.

2. The rotation of the central wheel 1 and the planet carrier 4 takes place only in one direction, but the angular velocity of the planet carrier 4 exceeds the angular velocity of the central wheel 1. The device works exactly as in the first case, the only difference being that the rotation speed of the central wheel 1 is less.

3. The rotation of the central wheel 1 and the planet carrier 4 takes place in a single direction, the central wheel 1 having a higher speed. The device in this case operates stably, since if the angular velocity of the planet carrier 4 changes, the planetary pinion 2 also changes the angular velocity to the opposite.

This means that if the rotation speed of the planet carrier 4 increases, the speed of rotation of the planetary pinion 2 also increases, which leads to establishing a pre-set working mode.

The device can be implemented as a unit with cylindrical wheels in a differential planetary mechanism. In this case, the calculations are much more complicated.

The proposed device can be used as a reducer to increase the transmission capacity, as an independent engine not consuming known types of energy under conditions that power is taken off the shaft of the planet carrier and then transmitted to the shaft of the central wheel. The latter is possible if, for example, the accumulator drive is involved in the operation, which will, ultimately, make it possible to obtain energy without spending known types of energy carriers and to improve the environment.

Ethanol provides break through for the hydrogen economy

Sorcha CLIFFORD

Source: Environmental Data Interactive Exchange,
Feb. 13, 2004

<http://www.edie.net/news/Archive/8065.cfm>

Scientists in the US think they may have overcome the barrier to the hydrogen economy. By using ethanol, a renewable fuel, to power their newly invented unit, coupled with a hydrogen fuel cell, one kilowatt of power - enough to power a home - can be produced, scientists at the University of Minnesota have discovered.

The researchers say their invention could reduce dependence on imported fuels, reduce carbon dioxide emissions and boost rural economies, by moving away from the non-renewable, usually fossil based hydrogen sources. Their findings are published in the current edition of *Science*.

Currently steam reforming is the process through which hydrogen is produced, this requires huge amounts of energy through high temperatures and large furnaces, making it unsuitable for applications other than large scale refineries.

Lanny Schmidt, Regents Professor of Chemical Engineering, explains: "The hydrogen economy means cars and electricity powered by hydrogen. But hydrogen is hard to come by. You can't pipe it long distances. There are a few hydrogen-fuelling stations, but they strip hydrogen from methane - natural gas - on site. It's expensive, and because it uses fossil fuels, it increases carbon dioxide emissions,

so this is only a short-term solution until renewable hydrogen is available."

Ethanol, which is already being produced from corn and has been used in cars, is easy to transport and relatively non-toxic. Using this energy to power a fuel cell could triple the energy output, compared to using the energy directly extracted from the corn.

"We can potentially capture 50% of the energy stored in sugar (in corn), whereas converting the sugar to ethanol and burning the ethanol in a car would harvest only 20% of the energy in sugar," said Schmidt. "Ethanol in car engines is burned with 20% efficiency, but if you used ethanol to make hydrogen for a fuel cell, you would get 60% efficiency."

The technology, which utilises the ethanol, is based on two innovations. "A catalyst based on the metals rhodium and ceria, and an automotive fuel injector that vaporises and mixes the ethanol-water fuel. The vaporised fuel mixture is injected into a tube that contains a porous plug made from rhodium and ceria. The fuel mixture passes through the plug and emerges as a mixture of hydrogen, carbon dioxide and minor products. The reaction takes only 50 milliseconds and eliminates the flames and soot that commonly accompany ethanol combustion," say the scientists.

The researchers, who were supported by the University of Minnesota's Initiative on Renewable Energy and the Environment, the National Science Foundation and the US Department of Energy, say they will continue improving the unit to increase the yield of hydrogen.

To the Stars

William B. SCOTT,

Aviation Week & Space Technology, 3/01/2004, page 50

www.AviationNow.com/awst

Zero point energy, which emerges from realm of science fiction, may be key to deep-space travel Advanced Technology

At least two large aerospace companies and one U.S. Defense Dept. agency are betting that “zero point energy” could be the next breakthrough in aerospace vehicle propulsion, and are backing those bets with seed money for ZPE research.

If their efforts pay off, ZPE-driven powerplants might enable Mach 4 fighters, quiet 1,200-seat hypersonic airliners that fly at 100-mi. altitudes as far as 12,000 mi. in about 70 min., and 12.6-hr. trips to the Moon.

ONE OF THOSE companies, BAE Systems, launched “Project Greenglow” in 1986 “to provide a focus for research into novel propulsion systems and the means to power them,” said R.A. Evans, the project leader, in a technical paper last year. Although funding levels have been modest, Greenglow is exploring ZPE as one element of the program’s “project-directed Research,” according to John E. Allen, a consultant to BAE Systems.

At least one large U.S. aerospace company is embarking on ZPE research in response to a Defense Dept. request, but the company and its customer cannot be identified yet. National laboratories, the military services and other companies either now have or have had low-level ZPE-related efforts underway.

The concept of zero point energy is rooted in quantum theory, and is difficult for even the technically minded to grasp. But theories validated by meticulous experiments have confirmed that

so-called “empty space” or what scientists call the “quantum vacuum” actually is teeming with activity. Tiny electromagnetic fields continuously fluctuate around their “zero-baseline” values, even when the temperature drops to absolute zero (0 K) and all thermal effects have ceased.

A leading researcher in this realm of new physics, Hal E. Puthoff, director of the Institute for Advanced Studies here, explains zero point energy this way: “When you get down to the tiniest quantum levels, everything’s always ‘jiggly.’ Nothing is completely still, even at absolute zero. That’s why it’s called ‘zero point energy,’ because, if you were to cool the universe down to absolute zero—where all thermal motions were frozen out—you’d still have residual motion. The energy associated with that ‘jiggling’ will remain, too.”

For most technologists, quantum theory conjures up images of extremely minuscule particles and field effects. Why would aerospace companies and governments invest in researching “jiggles” that defy measurement? Because those quantum or vacuum fluctuations—the “jiggles” of zero point energy—if tapped somehow, could produce stupendous amounts of energy and enable deep-space voyages that are impossible for today’s propulsion methods.

Spacecraft capable of interstellar travel will approach the speed of light, and may have to extract energy from the vacuum of space. However, researchers could be years or decades from achieving the breakthroughs necessary to build such a propulsion system.

“Human transportation within the Solar system will only become technologically practical if there is a breakthrough in terms of speed, coupled with an adequate energy/fuel supply,” Evans said.

Energy densities (the amount of energy per unit volume) of the quantum vacuum are comparable to those of nuclear energy—or even greater. Consequently, its potential as an energy source is absolutely enormous.

Quantifying the potential of ZPE is difficult, and scientists are reluctant to translate the huge numbers predicted by quantum theory into terms easily grasped. Puthoff's explanation is particularly graphic, though: "It's ridiculous, but theoretically, there's enough [zero point] energy in the volume of a coffee cup to more than evaporate all the world's oceans," Puthoff said. "But that's if you could get at all of it, and you obviously can't. So, when it comes to a practical amount of ZPE [that might be extracted from the vacuum], you're still talking about maybe 1026 joules/cubic meter.

"The potential is practically limitless; way beyond what can be conceived. But until we learn what ZPE embodiment to use [an engineering process to extract ZPE], and to what frequency we can effectively extract the energy, it's really hard to make a practical statement about how much you can actually use," he cautioned. "So far, the embodiments are pitifully small. [Experiments] have produced about the same amount of energy as a butterfly's wing—pico-watts or so. But the potential is there."

That staggering potential has kept researchers pursuing a "new physics" that some critics classify as near-science fiction. Still, respected scientists and government agencies believe the quest is worth investing time, effort and money. In 1986, the U.S. Air Force's then-Rocket Propulsion Laboratory (RPL) at Edwards AFB, Calif., solicited "Non-conventional Propulsion Concepts" under a Small Business Innovation Research program.* One of the six areas of interest was "Esoteric energy sources for propulsion, including the zero point quantum dynamic energy of vacuum space..."

In particular, the late Robert Forward, a respected scientist consulting for RPL (now part of the Air Force Research Laboratory system), recommended additional research of the "Casimir effect," which had suggested the existence of ZPE decades earlier. This phenomenon is attributed to H.G.B. Casimir, a Dutch researcher, who, in 1948, confirmed the reality of quantum vacuum energy by calculating the value of a small force between two uncharged metal plates.

"IF YOU PUT TWO metal plates very close together, they partially shield some ZPE frequencies," Puthoff explained. "That means the energy bouncing back and forth between the plates is less than the energy outside, so the plates get pushed together.

Radiation pressure outside the plates is greater than radiation pressure in the somewhat-shielded area between the plates. The plates coming together convert vacuum energy to heat."

In 1997, Steve K. Lamoreaux, a University of Washington atomic physicist at the time, conducted precise measurements of the Casimir effect. His results almost perfectly matched the predictions of quantum electrodynamics theory, according to a peer-reviewed paper in the Jan. 6, 1997, issue of *Physical Review Letters* <http://prl.aps.org/>.

A manned space probe powered by ZPE could, theoretically, make a trip to Mars in 7-40 days. Credit: ERIK SIMONSEN

When NASA established the Breakthrough Propulsion Physics (BPP) program in 1996 to research advanced forms of space transportation, it focused on three objectives:

- * Propulsion that required no propellant mass.
- * Propulsion that attained the maximum transit speeds physically possible.
- * Breakthrough methods of energy production to power such devices.

Marc G. Millis, founder and former project manager of the BPP effort, said the program sponsored G. Jordan Maclay, chief scientist for Quantum Fields LLC, was "to look at getting more empirical evidence to flesh-out what this vacuum energy 'stuff' really is." Maclay performed a precise measurement of attractive Casimir forces, and was working to quantify repulsive forces when BPP funding was deleted from NASA's Fiscal 2003 budget (www.quantumfields.com). The BPP program has been on hold since then.

Through private funding, Puthoff and his team have secured patents based on converting ZPE to "miniature ball lightning—micron-size lightning—using a very small traveling wave tube," he said. "It appeared to demonstrate the principle [of ZPE extraction], but we were never successful in scaling it up to useful levels. We're now working on various engineering embodiments to do that, but we're not there yet."

"As to where we stand on energy exchange [research], the force levels and amount of energy are piddly—real, but extremely small," Millis added. "We're still [asking]: Is there any way to interact with this vacuum energy to create forces without rocket propellant? Can we [develop] a form of propulsion that needs no propellant... for very deep-space travel?"

So far, the answers have been "no" or, at best, "maybe." But there are striking and encouraging parallels

between the evolution of ZPE and the history of nuclear energy research. Albert Einstein's equations showed that an infinitesimal amount of mass could be converted to a tremendous amount of energy via nuclear reactions. Initially, scientists insisted something was wrong; the numbers were just too large. They didn't make sense. But the mathematics were incontrovertible.

Then natural radioactivity was discovered, validating Einstein's equations. However, energy releases found in nature were so small that even Einstein believed radiation could never be harnessed as a useful energy source.

"At that time, it looked like [nuclear] fission was going nowhere," Puthoff said. "The big breakthrough came when [atomic physicist Enrico] Fermi did his famous experiment at the University of Chicago. He found that a material releasing lots of neutrons could act as a catalyst and start a runaway reaction. Fission would take off and cause a big effect—eventually the atomic bomb in the weapons [arena] and nuclear reactors in the energy [production] area."

Zero point energy has a similar history. Predictions from quantum mechanics said ZPE existed, but the huge numbers associated with it prompted questions about the mathematics' validity and suspicions of errors in quantum theory. "Then the Casimir effect was found to be a natural embodiment of natural principles," Puthoff said. "The [general] reaction was: 'OK, but it's a small effect. It's never going to be useful for making energy'—just like what was said about nuclear energy. So, we're now at the stage of looking for the equivalent of Fermi's neutron-source catalyst—something that ignites the ZPE process."

If that "catalyst" is ever discovered, and a ZPE powerplant is developed, how would it affect aeronautics and space travel? Allen, a BAE Systems consultant and engineering professor at London's Kingston University, explored that question in a comprehensive paper published last year by Progress in Aerospace Sciences (www.sciencedirect.com). Entitled "Quest for a Novel Force: A Possible Revolution in Aerospace," the paper included a "what-if" study, based on "a novel force engine." Allen assumed four sizes of the powerplant, referred to as a "mass-dynamic engine," with thrusts in the 5-500-metric-tons (11,000-1.1-million-lb.) range. A likely source of energy for them would be ZPE.

Allen is no stranger to cutting-edge projects, having been involved in the preliminary designs of a transonic nuclear weapon (Blue Danube), an early supersonic guided missile (Blue Steel), early space

shuttle work, and several advanced fighter and trainer aircraft at Hawker Siddely. "I am familiar with bringing novelties into successful aerospace hardware, and am well aware of the qualities required to make a successful product," he wrote.

Through a systematic process he calls "imagineering," Allen conceived of several air and space vehicles powered by mass-dynamic engines:

- * A heavy-lift freighter capable of carrying a 1,000-metric-ton payload more than 20,000 km. (10,792 naut. mi.) at speeds of Mach 0.7-0.9.
- * A Mach 4 vertical takeoff/short-takeoff and landing fighter.
- * A 600-1,000-seat airliner powered by two 250,000-lb.-thrust engines.
- * A Lunar craft that would climb slowly to a 36-km. altitude to minimize aerodynamic effects, then accelerate to a maximum velocity of 10-km./sec. (19,440 naut. mi./hr.) until slowing for a landing on the Moon. "This trajectory provides a flight time of 12.6 hr.," Allen suggested.
- * A quiet hypersonic "megaliner" capable of climbing vertically to a 100-mi. altitude, then flying a curved flight path at satellite-like speeds. Allen selected a point-design of 1,200 passengers and a range of 12,000 mi. With upward accelerations limited to 0.5g, flight time would be about 70 min.
- * Mars transporter that could take a 20-person team to the red planet in 7-40 days, depending on the separation distance between the Earth and Mars.

Allen's analyses showed the performance of these craft are within the realm of feasibility, if using a breakthrough powerplant running on fuel with ZPE-like energy densities.

But is harnessing ZPE feasible, and, if so, how soon? If the expectations of cutting-edge scientists are any guide, a ZPE power source with aerospace applications could be in sight.

"I'd say our confidence level [of a breakthrough] is 50% or better. We have some ideas that we're exploring, but we're not ready to talk about them," Puthoff hedged. "The big hurdle is finding an embodiment that will permit scale-ups to useful levels of energy—finding the catalyst for accelerating currently known processes. If our [research] is successful, almost assuredly there'd be no problem with small units—a few cubic centimeters of ZPE—providing enough energy to power spaceships."

As to when a breakthrough might occur, "We're definitely not stumbling around in the dark any more," Puthoff continued. "It's been shown that zero point energy is real and has real consequences. It's definitely a technology that's not ready for prime time, but it's definitely ready for serious scientific investigation."

Based on an historical cycle of breakthroughs in transportation technology, the human race is due for another big leap in about 2012 (see p. 51). Last year, Allen predicted one could occur "within a decade or

two. This stage is equivalent to where aeronautics was in the 1890s."

Still, NASA's Millis urges caution. "I really don't want to raise people's expectations too much," he said. "To get overly excited causes more damage [in the field of ZPE research] than skeptics do. We need to make sure we're not extending our claims beyond what the evidence points us to today. To be impartial, I'd say we're not on the verge of grandiose breakthroughs. But we have another embryonic field opening up to us."

Alternative Energy Sources

<http://mediapress.media-az.com/1201047.html>

The Ministry of Fuel and Energy of Azerbaijan (MFEA) has developed a national program for using alternative energy sources.

According to representatives of the MFEA, the main directions for the development of the power industry have been outlined, taking into consideration use of natural potential of the republic. This program envisages building several wind power stations at the Abershon peninsula and in Hachchivan

Autonomous Republic (NAR) during the period from 2004 to 2010, ten medium-sized electric power stations of different wattage during the period from 2005 to 2012, solar collectors and low-power solar electric stations in Abershone, in the Millsk-Mugan region and also in NAR. The fulfillment of the present program will make it possible to more rationally use the energy resources of the country, to create new industries and new jobs, and to provide for a rise in the social security level of the republic.

NEWS

Issue 37 of "*Electric Spacecraft*" magazine appeared at the end of March (publisher – Charles A. Yost, address: ESJ Network 322 Sunlight Drive Leicester, NC 28748 USA, tel. 828-683-0313, fax 8286833511, e-mail: cay@electricSPACEcraft.com, web-site www.electricSPACEcraft.com). Some of the articles published in the current issue will be reviewed below.

The article titled "*Inside the ESJ Networkers' Lab & Mini-Conference Center*" considers the work of the ESJ Networkers Company research center in the field of studying vacuum and plasma study.

Another article (written by *Richard Hull*) reveals some design features of Tesla's high-voltage coils.

These devices are also reviewed in an article by Louis Balint.

In an article titled "*The Fascinating Electro Wand*" a new electric device is described, which makes it possible to demonstrate the main principles of electrostatics to students. An article by Reg Hackhaw ("*Electromechanical Charge Shuttle: Electrostatics in Action*") is dedicated to experiments with another electrostatic device.

Another interesting article written by *Leslee Kulba* and titled "*What Part of Coulomb's Law Don't You Understand?*" considers a hypothesis on how electromagnetic radiation is connected with the law of gravity.

The Un-Electron or the Many Faces of the Electron

by **Adrian AKAU**,
adrianakau@aol.com

When does an electron not behave as an electron. How may this happen and what are the consequences.

In Poliakov's opinion, given in his book "The Introduction to Experimental Gravitonics", a photon may become an electron (or a positron) when the tail of the photon unites with its head (Fig. 1a taken from page 34, Russian version). The internal structure of the electron then becomes three unquantums separated by three anti-unquantums by a shell structure (Fig.1b taken from page 34, Russian version).

Cold electricity is produced when pressure in the form of high voltage

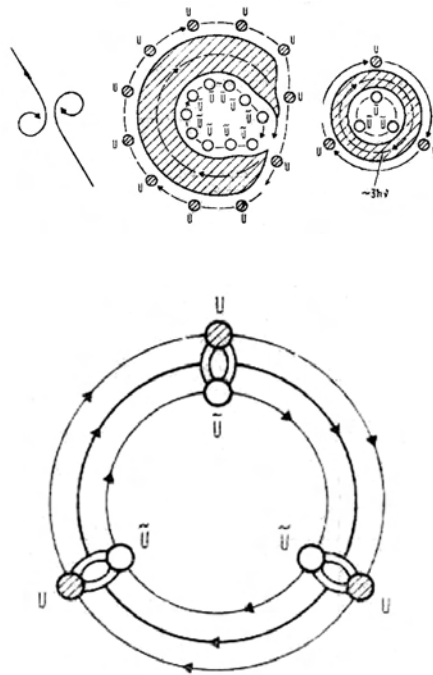


Fig. 1

(3000 volts pulsing dc) is applied to the electron structure as the electron is suddenly stopped. (Edwin Gray's conversion switching element tube patents 4,595,975 and 4,661,747)? The electron appears to briefly change its characteristics. It gives out a sudden burst of radiant energy which is captured by grids 34a and 34b of the tube (see Fig. 2).

Why should this cold electricity be given off? One possible and plausible explanation is that the sudden pressure on the electron causes an acceleration of change in volume of the electron according to equations of

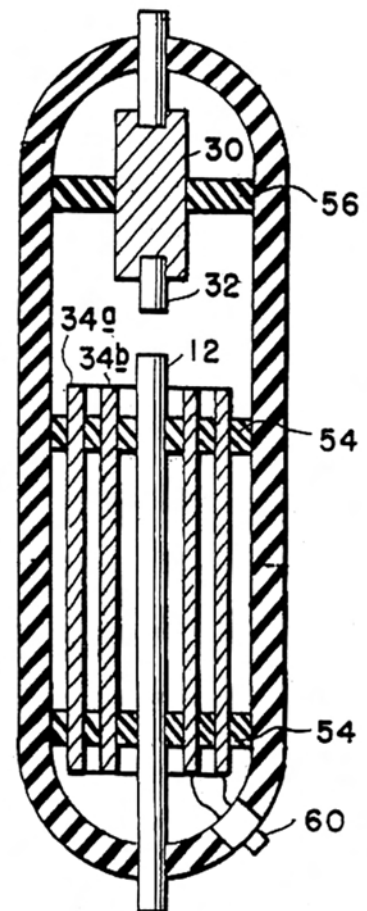


Fig. 2

Vladimir Sukhanov that are based upon experiments of N. Kozyrev). This sudden pressure may tend to reverse the effect described by Poliakov in the formation of the electron from the photon, and in doing so, release radiant energy.

Particularly, this change in volume may affect the distance between the unquantum and the antiuniquantum particles and may be placing stress upon the separating shell structure. Briefly, the electron may momentarily become an un-electron particle before regaining its original structure.

According to Hal Puthoff, an electron absorbs energy continuously as it zips around the nucleus; it needs continuously to gain this energy in order to uninterruptedly radiate away an equal amount of energy as predicted by classical theory. Similarly, the un-electron produced by the Edwin Gray conversion switching tube must be absorbing energy to regain its original structure since it releases "cold electricity" upon impact which is being collected by the grids.

Dr. Randall L. Mills of Science *BlackLight Power* states that electrons of hydrogen atoms are "induced by a catalyst to transition to lower-energy levels (lower base orbits)". These "hydrino" atoms then react with other compounds to form hydrides. A second catalyst such as vaporized potassium or some type of plasma (glow or microwave) made from ionized helium may then be used to change the hydrino hydride back into atomic hydrogen while releasing energy at, somewhere between the chemical and nuclear levels. The real question here is how the catalysts are affecting the electron. The energy gained must be from the electron as it becomes the hydrino, during which time, the electron must be acting as a non-electron.

In the case where the hydrino atom is formed, the bond between the electron and the proton must somehow be weakened to permit the electron to drop to lower base orbits or, according to Dr. Mills, orbits corresponding to fractional quantum numbers. The information supplied by Dr. Mills may not be complete; there may be some other input involved. Professor Kanarov uses a similar method in causing the bonds to be weakened by timed electrical pulses. He states that at certain frequencies, the bonds weaken because of harmonic effects so as to permit orbital changes and resultant decomposition of substances such as water at low energy levels. Subsequent recombination of the molecules result in much more energy released than originally supplied by the pulses. Is an electron acting as a non-electron during the time it's bond is harmonically affected?

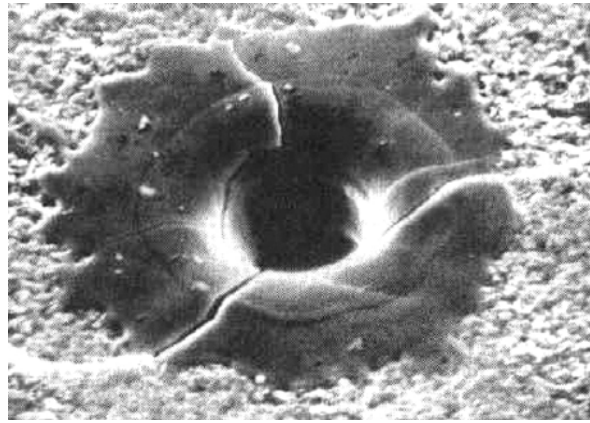


Fig.3

What do the efforts of Dr. Mills and Prof Kanarov have with respect to the electron structure. At the time the catalyst acts (Dr. Mills) or the molecular bond harmonics are attained (Prof Kanarov), the electron must be undergoing some kind of stress so as to alter its normal behavior. In other words, it must temporarily become a "non-electron" just for an instant or two until it can draw back energy and stabilize itself as Dr. Puthoff has stated.

In the case of electron clusters (charge clusters or electrons packed as tightly as atoms in a solid and not repelling each other), these electrons must really be non-electrons or not behaving as normal electrons for this period of time because electrons normally repel each other. Ken and Steve Shoulders call them EV's or strong electrons because they contain more energy than a normal electron and cause atomic disruptions that liquify metal upon impact without the usual signs of conventional heating (Fig.3).

Another form (face) of the electron would be found in ball lightning. In this case, the non-electron is also clustered but the cluster must be producing an additional force if the electrons precesses in rotation. An electron cluster of ball lightning is sometimes able to affect objects in its path so as to raise them up. A normal electron would not be producing this force, therefore the electrons in ball lightning must again be non-electrons, at least for a short time.

Electrons in springs subjected to high pressures may also cause, under certain conditions (short reset times during the input phase (input torque of the work cycle) to be less than the work output part (going to the gears and driveshaft) of the work cycle. Again, electrons subject to this impulse are acting as non-electrons for a brief interval; Hooks law is not strictly obeyed because electron interaction with its surroundings in the metal crystal lattice structure do not permit equal changes in the two

phases of the work cycle (Editor: the present idea refers to the analysis of operation of Glenn Gates' generator)

There are probably numerous other aspects of the electron which have not been discussed or have not yet been noticed but the important point is that electrons can, under certain circumstances, act to produce or absorb energy (as energy converters) or to produce or absorb force but, while doing so, may not

be electrons in the sense that we understand them to be. They act as "non-electrons" or as "electrons of different faces".

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Luxeon III Star Light Fixture System

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Lumiled's Luxeon III Star LED is a monumental development in lighting system technology that will revolutionize the industry. The reduction in power consumption and increased operational life provide significant cost savings that will make the Luxeon III Star the future of lighting systems.

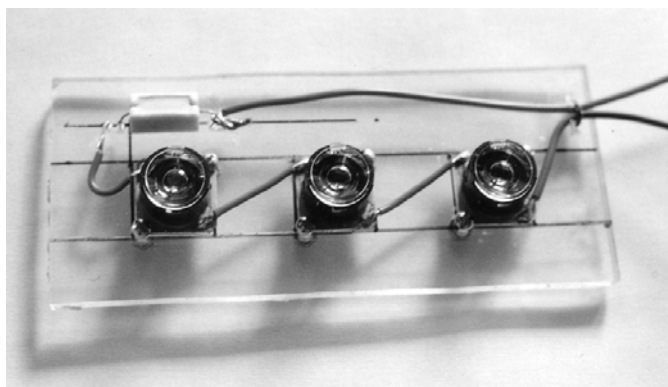
The Luxeon III Star Light Fixture (Fig.1) provides a 85% reduction in power consumption compared to a standard incandescent bulb. The operational life of Lumiled's LEDs is 100 times longer than an incandescent bulb.

The Luxeon III Star Light Fixture consumes 12 watts of power and provides the equivalent illumination of a

90-Watt incandescent bulb. This allows residential, commercial and industrial lighting systems to reduce power consumption by 85%. The Luxeon III Star Light Fixture when combined with solar panels and a battery bank can reduce power consumption to zero and provide lighting independent of utility power outages and rate increases.

The Luxeon III Star LED just came to market a few months ago. This is a true "disruptive" technology that will greatly impact the lighting market. The timing is perfect. We are at the beginning of a new and very lucrative market. The future certainly looks very bright for the Luxeon III Star Light Fixture System.

The design work is a good working beginning but is not perfected. There are probably many ways to improve the design, such as heat sinking the LEDs, pulsing the DC, refinement of the assembly process and techniques of voltage regulation. I would appreciate hearing suggestions for improvements. Please review the Custom Luxeon Design Guide, AB12 for technical assistance. Go to www.luxeon.com, then to Library to view AB12.



Vortex Heat Generators and Other Inventions by Yuri S. Potapov

Alexander V. FROLOV

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Planning our meeting with Yuri S. Potapov this April in Moscow, we intended to discuss possible ways of developing our partnership, in particular, the terms and cost of building a 60 kW autonomous fuelless electric power station operating on an air self-rotating vortex. A version of an air turbine, which, according to Potapov's evaluations, will generate up to 5 kW of power on the shaft of an electric generator, is shown in Fig. 1 and Fig. 2.



Fig.2



Fig.1



Fig.3

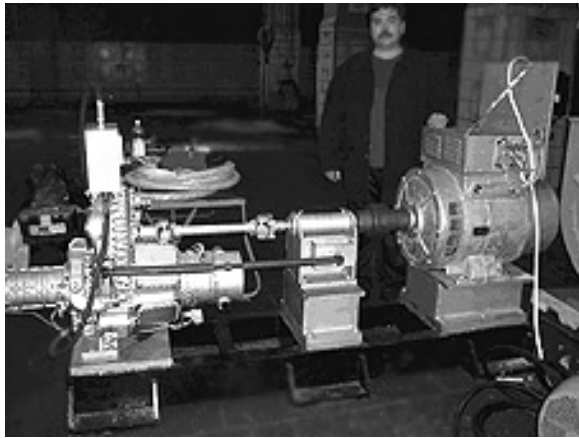


Fig.4

The inflow of air (the nozzle on the left) provides for the rotation of the rotor, the shaft of which (on the right side of the photo) generates a torque on the shaft of the electric generator via a reducer. Though we did not test the turbine, its working principle was demonstrated to me by means of an air compressor at a car service station (Fig.3).

Discussing the possibility of demonstrating this technology, Potapov specified that a working 50kW prototype, the operation of which can be studied in the near future, is now functioning in Ijevsk city. It is currently being tested by the AKOIL Company (Fig.4) (The photo has been taken from the web-site of the company <http://www.akoil.ru/airels.htm>.)

Another topic, which we discussed during our meeting, refers to VTG-8, vortex generators of the last generation created by Potapov. A shopping center on Izmailovskaya Street in Moscow, which will be heated by one such heat generator, is shown in Fig.5. The total area of the shopping center premises amounts to almost 2000 m². A VTG operating on the basis of a 37 kW electric motor is planned to be used. The VTG will be



Fig.5



Fig.6

switched on only for a short period of time with the purpose of heating the water in a storage tank up to the temperature needed.

Fig.6 shows an electric motor (on the left), which rotates the rotor of a vortex heater. In the bottom right corner of the picture one can see a pump and a branch pipe, which comes out of a storage tank with a volume of 0.9 m³ filled with water.



Fig.6

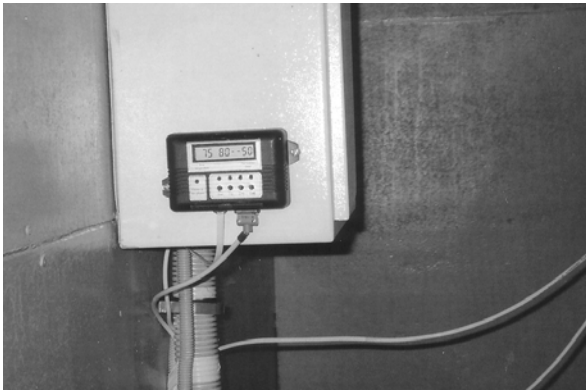


Fig.8

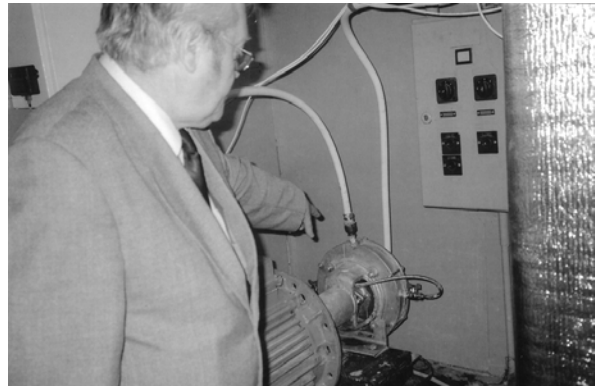


Fig.9

The tests carried out showed that the water gets heated up from 40 to 90 degrees C in 90 seconds. The temperature was measured at the output of the heat generator. The automatic equipment shown in Fig.7 and Fig.8 turns the motor off, should the water exceed the preset temperature. Formation of steam is possible, but is not needed in the case described. The estimated energy efficiency of a heat

generator of this model, according to the inventor's own calculations, totals 200%. We hope to get new data on the efficiency of the present heat generator.

In the next issues of "New Energy Technologies" magazine we will continue publishing articles concerning the work of Potapov. You may contact him at the following telephone number: +7 911 263 14 28

Report on practical operation of Usmar heat generators

Kitskan Noul-Neamts Monastery of the Holy Ascension

□ 11/7 of April 10, 1997

The monastery economist, **priest FEODORITE**

(The report is published with the permission of **Yuri S. Potapov**)

Today, when Orthodox churches, which were almost completely destroyed, are being actively rebuilt and restored in conditions so limited as compared to the amount of donations needed, monks are forced to economize on energy carriers to provide the minimal living conditions needed to pray and to work.

Having studied all possible ways of solving this problem, the monks of our cloister responsible for this crucial decision opted to use Yuri S. Potapov's Usmar heat generators. Four-year operation of two generators of this type (one, with a power of 2.8 kW, was used for heating water in the refectory, the other one, with a power of 32 kW, being used for heating living quarters with a volume of 1800 cubic meters) allow me to establish the following facts:

1. Installing a 2.8 kW heat generator in the refectory made it possible to achieve a 50 kW economy in energy consumption as compared to the way we used to heat water.

1.1 The generators lightened the work of the monks on duty, making it safe, and also allowed us to build a centralized system of hot water supply in the refectory.

1.2 In addition, the working generator heats the large-volume room where it is being operated.

1.3 The system is very simple to operate.

1.4 The system showed itself to be failsafe.

2. Installing a 32 kW heat generator (the factual power drawn amounted only to 26-28 kW), made it possible to avoid spending

large sums of money on buying other types of fuel.

2.1 The installation allowed the monks to liberate more time for doing other things.

2.2 It created good living conditions.

2.3 During the operation period, we did not even need to use the maximum power of the installation. We would also like to point to the fact that the installation proved itself to be failsafe, easy-to-maintain, effective, economical, environmentally friendly and reliable. Moreover, for the time that has passed from the moment these heat generators were installed in the monastery, academician Potapov has managed to radically improve the construction and effectiveness of his heat generators compared to the heat generators of the previous generations.

Recently we have addressed academician Potapov asking him to build a fully autonomous heat-wind power station with a capacity of about 1000 kW, making it possible to share the power generated with the village polyclinic and a hospital designed to accommodate 100 patients, which are situated near the monastery. Installations using water, wind or other clean, renewable natural sources of energy stand high in our favor. I, personally, am absolutely sure that the future of humankind and of all the countries of the world belongs to such power systems.

A Report on Operation of a Cavitation Heat Generator Installed by Akoil, Ltd

«Zavialovsky» Hothouse Market Enterprise, Ijevsk
May, 20, 2003

A preliminary evaluation and analysis of the performance shown by a Cavitation Heat Generator (CHG) equipped with a 15 kW have shown that this device is more economical than electrode-type heating systems and the electric heat pumps with an efficiency factor of 180-200%. The 15 kW generator was installed in a canteen, the volume of which totaled 1910 cubic meters. Tests were carried out during two months (February and March) at an environmental temperature from -5 to 15 °C.

For the two months the installation was in operation, a real economy in power consumption was achieved, which directly resulted in saving of costs. The real monthly power consumption amounted to 3 kW per hour. Unfortunately, we could not see the maximum power level of the installation because the outside temperature was gradually rising. The system can provide not only thermal energy, but hot water as well. The major advantage of the device lies in the fact that there is no need to repair heating mains, to support a staff of heat engineers, or to control the temperature mode (since the installation operates in a fully autonomous mode). The heat generator is very simple to operate. It is also fire-safe and blast-proof. Hot water and central heating are present all year round, no matter whether it is heating season or not.

The advantages of the installation:

- * there is no need to support a staff to constantly control the temperature of

- the heat carrier and the working installation;
- * the present system is absolutely environmentally friendly;
- * the system operates in an absolutely autonomous mode; the only service needed is to control the operation of the installation from a console.
- * the heat generator is incorporated into already-existing heating systems inside buildings and premises of different types without the need for a pause in their operation;
- * the use of Cavity Heat Generators at buildings situated far from centralized heating mains is especially preferable;
- * the installation is not liable to examination by the boiler inspection service. The operation of heat generators with an electric power of no more than 100 kW is performed without any license (Federal law № 28-FZ of 04.03.96).

The drawbacks:

- * noise from the electric motor is constantly present during operation

Wishes to the producer:

- * the noise level should be reduced to a minimum

Nanosys – nanotechnologies in solar cells

www.nanosysinc.com

Technology pioneer Nanosys of Palo Alto, California thinks solar's day in the sun has arrived. The firm is developing tiny photovoltaic cells that can be incorporated into the fabric of roofing materials to provide power to homes and other types of buildings. Nanosys is combining the science of solar cells with the science of nanotechnology, which manipulates items as small as an atom to do everything from switching electricity to storing data to sensing the movement of a bridge that is beginning to weaken. Thanks to this, Nanosys can already embed microscopic photovoltaic crystals into plastic sheeting. One prefabricated Nanosys roof could generate enough electricity to run all the appliances in a typical home, including the washing machine, the toaster, the PC and the entertainment center. Electricity generated during the day can be stored in batteries for use at night.

A single square meter of the solar-ready plastic will cost about \$100 and last 20 years, so a complete roof would cost a few thousand dollars. Nanosys' co-founder and head of business development, Stephen Empedocles, says that's a good investment, since the tiles will generate electricity at about 4 cents per kW-h, well below the 20 cents to \$1 for traditional solar panels.

Empedocles does not expect his product to reach market until 2006. With \$70 million in venture capital from Arch Ventures, Polaris and Lux Capital along with multimillion dollar US government contracts from the Defence Advanced Research Projects Agency, the National Science Foundation and the National Institute of Health, the 35 person company should make it.

Vortex Heat Generators of the RUFIKO Company

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The research and development team of our company spearheaded by Yuri S. Potapov, an Academician of the Russian Academy of Natural Sciences, has developed and put into mass production vortex heat generators of the 7th generation, designed to provide autonomous heating and hot water supply for households and industrial facilities. The generators are operated in direct, automatic and remote modes depending on outdoor conditions. A vortex heat generator's load percentage amounts to 10 to 20 % a day. The efficiency factor of a vortex heat generator (the efficiency of energy conversion according to EEC standards) is 2.2. This makes it possible to achieve a two-fold reduction in electric energy consumption.

The payback period of a new system equals no more than a single heating season.

A vortex heat generator (VHG) consists of a cylindrical case, equipped with a rotor, which is rotated by an electric motor. The generator has a hydro-accumulator for night operation. Working fluid (water) is tangentially directed to the vortex heat generator's inlet. Then the water, run along a complex route, gets hot. By the time this happens, more than 500,000 cycles per minute of compression and expansion of the water have taken place. The heating is performed due to the friction of water molecules, cavitation and fusion. The system, equipped with a microprocessor, operates in a pulse mode and maintains the assigned temperature regime at different outdoor temperature values. This provides an additional economy of electric energy. Three-year operation of a new generation VHG in Moscow has shown that no complex and expensive service is needed.

The new VHG differs from vortex heat generators of the first generations in

Model	Power of the el.motor, kW	Vof the premises heated, m ³	Weight, kg	Price, \$.
VTG-1	5,5	330	80	2430
VTG-2	11	660	175	2740
VTG-3	15	900	250	3430
VTG-4	22	1320	350	4200
VTG-5	37	2200	400	5100
VTG-6	55	3300	450	6370
VTG-7	75	4500	550	8430
VTG-8	100	6000	750	12200
VTG-9	150	9000	850	24100
VTG-10	315	18900	2150	41230
VTG-11	400	24000	1550	58100
VTG-12	500	30000	1750	78300
Voltage of the mains, V 400				
Number of rotations of the electric motor, min 2800				
Maximum heat carrier temperature (water, antifreeze, tosol), °C+95				

that it works without using an electric pump, heating water up to 95 °C in one operation. Steam formation is also available if needed.

The experience of operating a VHG has demonstrated that the cost of heating 1m³ of a premise's volume averages \$ 0.63 a year. Compare:

- Average cost of heating by means of an electric boiler – \$ 16.18;
- Average cost of heating by means of a boiler operating on burning liquid fuel – \$ 8.81;
- Average cost of heating by means of a gas boiler – \$ 1.23.

BUSINESS OFFER

Developing a project based on the characteristics of certain premises, production, delivery, and assembly on a turnkey basis are carried out after a customer's order has been sent to our address (fax letters are also accepted), all the necessary contracts have been signed, and a 100% prepayment of the VHG chosen has been made. The following modifications of vortex heat generators are offered:

- **The prices (without VAT) given are valid for Moscow**
- **A scheme for incorporating a VHG into a central heating system comes with a VHG purchased.**

Letters to the editor

From: puthoff@aol.com
Date: May, 31 2004
Subject: Chernetskii

In the late '80s or early '90s we saw a Russian press release from Novosti concerning a device built and tested by Chernetskii that was claimed to extract energy from "empty space" (the vacuum). This attracted our interest since some of our own research effort was along similar lines.

Given the credentials of Chernetskii as an apparently competent plasma physicist, I arranged to visit Moscow to see his device in operation for myself. Chernetskii was very cordial and enthusiastic about demonstrating his device. It was an arc discharge device operating in a relaxation oscillator breakdown mode, and looked impressive in that it appeared that, without an increase of power from the power line, output power to a light bulb load increased when the desired arc-discharge operating mode was triggered. His opinion was that the arc discharge caused transient breakdown of the vacuum with a corollary release of vacuum energy.

To make a long story shorter, he provided me a complete book on his device development and experimentation, with all the details necessary to replicate his experiments. I had the book translated, and in my lab (EarthTech International, Inc. —see www.earthtech.org) we began a lengthy series of replication experiments over several months (many gases at different pressures, many arc discharge conditions) and made measurements using sophisticated energy/power measurement apparatus.

In the end it appeared from our measurements that his measurements might be flawed, in that our replication device reproduced the phenomena that led him to believe that he had anomalous energy generation, but our

instrumentation indicated that this was not the case. (Difficult measurements to make because of pulse-mode operation with highly noisy spike phenomena, and requiring the expensive, sophisticated instrumentation that we had at our disposal.) To reduce it to its simplest characterization, the error seemed to be along lines similar to power factor error often encountered in energy device evaluation by those not knowledgeable about this type of problem. When I discussed this with him in correspondence, he acknowledged that he was aware of this potential pitfall, often saw it himself, but still considered that at base the device still under certain operating conditions would transition into a mode where excess energy was generated.

The next step (to which he agreed) was to come to our lab with his device so that we could collaborate further to determine the facts of the matter. While we were in the process of obtaining a visa for him, he had a heart attack or stroke (not unexpected; he was already partially paralyzed by a previous stroke when I met him in Moscow and was aged and in ill health).

I was greatly saddened by his death, as I and my colleagues had looked forward to his visit and further collaboration. It is not my impression that he was pursuing his activity in a fraudulent manner; rather, if he was mistaken in his claims, it was more likely on the basis of faulty measurements that led him astray under conditions where measurements were extraordinarily difficult to make accurately, and almost certainly required access to better apparatus than was available to him.

Hal Puthoff, Ph.D.
President and CEO, EarthTech International, Inc.
Director, Institute for Advanced Studies at Austin
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Anti-Entropy Processes

An excerpt from a book by **E.G. OPARIN**,
“Physical Fundamentals of Fuelless Energy”

In different parts of a system which includes surfaces of a liquid with different curvatures, pressure difference can appear. This is conditioned only by molecular forces, other conditions being equal. These molecular forces were mentioned by Konstantin Tsiolkovsky as one of the conditions limiting the second law of thermodynamics.

This conclusion was experimentally proven by Lazarev in 1979. After a vessel containing a liquid had been separated into two parts by a microporous partition, a continuous macroscopic circulation of the liquid and steam was observed [103] (Fig.1). A patent was issued on Lazarev's invention, which he himself called Lazarev's koltsar [102].

In a description of the invention, the upper part of the vessel above the microporous partition is connected to a heater, while the lower part is connected to a refrigerator. Both the heater and the refrigerator apparently were added following the advice of an expert, who examined the application for the invention.

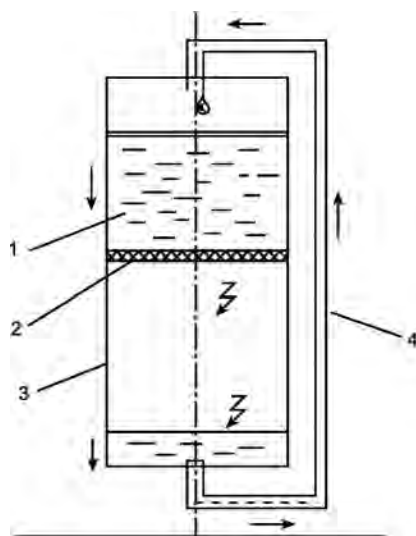


Fig. 1

Continuous microscopic circulation of liquid and steam inside Lazarev's koltsar takes place not due to the temperature difference between the heater, which, in turn, stays in thermal contact with the liquid above the microporous partition and the refrigerator, which stays in thermal contact with the liquid beneath the porous partition, but due to different conditions of vaporization and condensation of the liquid at the borders of phase separation

in the different parts of the vessel. The liquid in the lower part of the vessel gets heated up due to steam condensation, while in the upper part of the vessel it cools down due to evaporation of the liquid from the convex menisci beneath the porous partition. Such a change in the temperature inside the system corresponds to a spontaneous decrease of its entropy, which is impossible if the second law of thermodynamics is fulfilled.

Experiments which confirm these conclusions have been carried out by A.I. Veinik, a member of the Academy of Sciences of Byelorussia. Measuring the temperature difference by means of a thermocouple, he showed that the temperature of the liquid above the porous partition is always less than the temperature of a liquid with a flat surface [47, 48].

Veinik, who called Lazarev's koltsar a phase (a thermophase) perpetuum mobile of a second kind, constructed two prototypes of phase motors and tested them in a thermostat (Fig. 2). This is what Veinik wrote about the conditions of the experiment: "In order to avoid the distorting influence of the environment, the PE (Promising Engine) has been placed inside a copper calorimetric bomb with a wall thickness of 20 mm, which is faced with a light-weight foam-plastic on the inside; the bomb is placed in the thermostat with a set temperature. Testing the very first perpetuum mobile of a second kind, PE-1, was successful [48]."

Veinik obtained an inventor's certificate on an invention titled «A Source of Electricity» [49]. The essence of the invention lies in the following: «...a permanent liquid is constantly circulating in the closed circuit of the power source. This liquid alternately becomes steam or liquid. The evaporation of the liquid at one of the partitions is accompanied by heat absorption, while the condensation at the other partition (or at a free meniscus) by heat output. As a result, a temperature difference takes place,

which, for example, by means of a differential thermoelectric couple, is transformed into a difference of the electric potential. In such a way, a transformation of the thermal energy of the environment into electric energy is performed» [49].

As it follows from a description of the invention, the source of electricity was used for several months, generating electric energy in a thermodynamically balanced medium, which obviously contradicts the second law of thermodynamics.

Independently of Lazarev and Veinik, professor E.G. Smenkovsky showed that by using a microporous partition «heat and cold can be produced simultaneously» [188-190]. He applied for a patent for a discovery titled «A Phenomenon of Energy Separation», which was filed in the All-Russia Research And Development Institute for State Patent Examination on 9.8.86 (№ 1225). Here is a comment on this application from Gorkij State University: «...the inventor has practically refuted the second law of thermodynamics». No «considerable novelty in the phenomenon, which the inventor himself calls ‘energy separation’», was found. Thus, according to these conclusions, the phenomenon does exist «refuting the second law of thermodynamics», but does not have any «substantial novelty». As a result, Smenkovsky failed to register his invention. Then he turned to the Academy of Sciences but the result was the same.

Nevertheless, Smenkovsky constructed a «molecular reactor», which took the first (!) prize at one of the exhibitions held at the All-Union Exhibition Center (USSR) by the «Intellectual Initiative» International Association.

The essence of the phenomenon which Smenkovsky called «energy separation», as well as of Lazarev’s koltsar and of Veinik’s three-phase perpetual mobile of a second kind, lies in the fact that the horizontal microporous partition, dividing the vessel into two parts, creates different conditions for evaporation and condensation in different parts of the vessel: in the upper part of the vessel mainly evaporation of the liquid from the convex menisci takes place, while in the bottom part of the vessel steam condensation takes place. This leads to cooling of the upper part of the vessel and heating of its bottom part [188-190].

In Lazarev’s koltsar, as well as in Veinik’s electric power source and in Smenkovsky’s molecular reactor, a temperature difference is created and maintained without any additional work contrary to the Carnot cycle.

This temperature difference can be used to transform heat into mechanical work or electric energy.

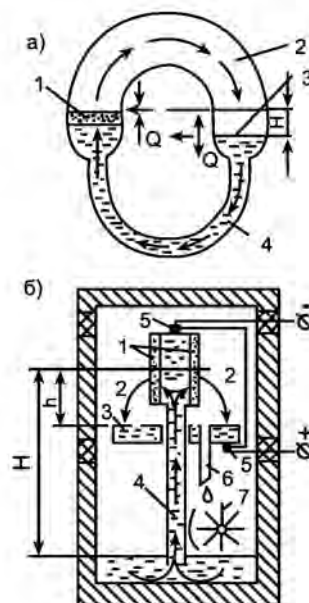


Fig.2

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THE WINNERS OF THE GLOBAL ENERGY INTERNATIONAL PRIZE – 2004 HAVE BEEN ANNOUNCED

Global Energy International Prize

Tel. / fax: (095) 783-8386

e-mail: info@ge-prize.ru, site: www.ge-prize.ru



The International Award Committee has awarded the Global Energy International Prize – 2004 **to the following scientists:**



Fyodor MITENKOV
— *Academician of the Russian Academy of Sciences, and research manager of the State Unitary Enterprise "Engineering Experimental Development Bureau named after A.A. Afrikanov" (Russia)*
and

The 2004 Global Energy International Prize, worth USD \$900,000, will be equally shared among the three prize winners.

The technology developed by Fyodor Mitenkov and Leonard Koch allows for the creation of a safer nuclear energy for human society. The development of power reactors on fast neutrons, marked by the Global Energy International Prize, is one of most important discoveries in the sphere of nuclear energy. Reactors of this type create the possibility to generate energy in an extended cycle, in other words to reproduce energy while in the process of work.



Leonard J. KOCH
— *Professor, and Retired Vice President of Illinois Power Company (USA)*

Alexander Sheidlin has created a scientific basis for modern heat energy which provides 90% of the total energy at present time. Pioneer explorations of water and water vapor thermodynamic properties, representing the basis for establishing power stations of the new generation with critical characteristics, belong to professor Sheidlin. Many of the world scientists have performed research in the direction mentioned contemporaneously with Alexander Sheidlin. Anyway, it was he who managed to achieve the sought after results. The outcome of his works have been included in all the fundamental domestic and foreign reference-books.

«FOR THE DEVELOPMENT OF APPLIED PHYSICS FUNDAMENTALS AND CREATION OF POWER REACTORS ON FAST NEUTRONS»



Alexander SHEINDLIN
— *Academician of the Russian Academy of Sciences, and Honorary director of the RAS Associated Institute of High Temperatures (Russia)*

At the same time Alexander Sheidlin has expanded the exploration works to the study of thermophysical properties of metals and their vapors (sodium, potassium, caesium, rubidium, liquid uranium). Many of these properties have been discovered for the first time in world history. The outcomes have found the widest application in nuclear power plants and direct power generating plants.

«FOR FUNDAMENTAL INVESTIGATIONS OF THERMOPHYSICAL PROPERTIES OF MATTER AT THE LIMIT TEMPERATURES FOR POWER ENGINEERING»

A chairman of the International Award Committee, Zhores Alferov, said that this year winners are brilliant scientists and individuals, and outstanding physicists, who have conducted research in the field of thermal physics, heat-and-power engineering and nuclear mechanical engineering for many years.

400 specialists from all over the world, including 240 foreign and 160 Russian scientists have the right to

nominate candidates for the 2004 Prize. More than 60 works were nominated, all of them complying with the concept of "global power engineering". More than a third of these works belong to non-Russian scientists.

The final session of the International Award Committee examined five research works, put forward by the Commission of Experts. There were several criteria areas assessed: science value, practical relevance, originality, and importance not only for the Russian energy sector but the whole world.

The second Global Energy International Prize will be awarded in St. Petersburg at the end of June, 2004. President Vladimir Putin is expected to present the award to the three winners.

The winners were announced on April 26, 2004 at the special international press-conference held in video-conferencing format in three cities: Moscow, St. Petersburg and Rome. This video-conferencing was provided by the official telecommunicational partner of the Prize – COMSTAR.

Letters to the editor

From: puthoff@aol.com
Date: May, 31 2004
Subject: Chernetskii

In the late '80s or early '90s we saw a Russian press release from Novosti concerning a device built and tested by Chernetskii that was claimed to extract energy from "empty space" (the vacuum). This attracted our interest since some of our own research effort was along similar lines.

Given the credentials of Chernetskii as an apparently competent plasma physicist, I arranged to visit Moscow to see his device in operation for myself. Chernetskii was very cordial and enthusiastic about demonstrating his device. It was an arc discharge device operating in a relaxation oscillator breakdown mode, and looked impressive in that it appeared that, without an increase of power from the power line, output power to a light bulb load increased when the desired arc-discharge operating mode was triggered. His opinion was that the arc discharge caused transient breakdown of the vacuum with a corollary release of vacuum energy.

To make a long story shorter, he provided me a complete book on his device development and experimentation, with all the details necessary to replicate his experiments. I had the book translated, and in my lab (EarthTech International, Inc. — see www.earthtech.org) we began a lengthy series of replication experiments over several months (many gases at different pressures, many arc discharge conditions) and made measurements using sophisticated energy/power measurement apparatus.

In the end it appeared from our measurements that his measurements might be flawed, in that our replication device reproduced the phenomena that led

him to believe that he had anomalous energy generation, but our instrumentation indicated that this was not the case. (Difficult measurements to make because of pulse-mode operation with highly noisy spike phenomena, and requiring the expensive, sophisticated instrumentation that we had at our disposal.) To reduce it to its simplest characterization, the error seemed to be along lines similar to power factor error often encountered in energy device evaluation by those not knowledgeable about this type of problem. When I discussed this with him in correspondence, he acknowledged that he was aware of this potential pitfall, often saw it himself, but still considered that at base the device still under certain operating conditions would transition into a mode where excess energy was generated.

The next step (to which he agreed) was to come to our lab with his device so that we could collaborate further to determine the facts of the matter. While we were in the process of obtaining a visa for him, he had a heart attack or stroke (not unexpected; he was already partially paralyzed by a previous stroke when I met him in Moscow and was aged and in ill health).

I was greatly saddened by his death, as I and my colleagues had looked forward to his visit and further collaboration. It is not my impression that he was pursuing his activity in a fraudulent manner; rather, if he was mistaken in his claims, it was more likely on the basis of faulty measurements that led him astray under conditions where measurements were extraordinarily difficult to make accurately, and almost certainly required access to better apparatus than was available to him.

Hal Puthoff, Ph.D.
President and CEO, EarthTech International, Inc.
Director, Institute for Advanced Studies at Austin
www.earthtech.org

Tesla & Schauberger Technologies

Bladeless Disk, Vortex & Implosion Technologies

News from **Frank GERMANO**

Web site <http://www.frank.germano.com/thecompany.htm>

"a completely system approach to power; clean, environmentally sound energy production and water transport, storage and revitalization"

Before we can begin, we need a brief description of our history: International Turbine And Power, LLC (my former company) was founded by a group of highly energetic engineers and scientists in 1998. We had only one goal; design a working Tesla Turbine and Tesla Pump. This goal became reality. During the 2000, 2001 and 2002 years, five functional prototype turbines were designed, built and tested, with each yielding remarkable performance results. Individual investors and investment companies provided the necessary funding of several million dollars for the research and development stages.

This year, 2004, Martin Dorantes, Guy Letourneau, Tad Johnson and myself (Frank Germano), dissolved the ITP entity, and have begun operations, independently. The newly formed company, now tentatively called "InVAID Systems", with Frank Germano at the helm,

has continued production of these revolutionary power and pumping systems. Our turbines and pumps are based on the pioneering research originally begun by Nikola Tesla, and of which he patented in 1911. Our prototype turbines have confirmed Tesla's claims, and, in our opinion (and third-party testing and validations), these turbines have become the "most simple rotary engines" yet designed. We have "improved" on Tesla's original design by further incorporating the vortex and implosion designs pioneered by yet another of history's forgotten figures, namely - Viktor Schaub-erger. Should conditions again become feasible for investors to take note of this technology, it is quite possible the original team will reunite and form an incorporated International Turbine And Power, once again. Time will tell.

To paraphrase Nikola Tesla - "Suppose someone should discover a new mechanical principle...something as fundamental as James Watt's discovery of the expansive power of steam, by the use of which it became possible to build a motor that would give ten horse power for every pound of the engine's weight? A motor so simple that a novice in mechanics could construct it and so elemental that it could not possibly get out of repair. Then suppose that this motor could be run forward or backward at will, that it could be used as either an engine or a pump, that it cost almost nothing to build as compared with any other known form of engine, that it utilized a larger percentage of the available power than any existing machine, and, finally, that it would operate with gas, steam, compressed air or water, any one of them, as its driving power..."

It does not take a mechanical expert to imagine the limitless possibilities of

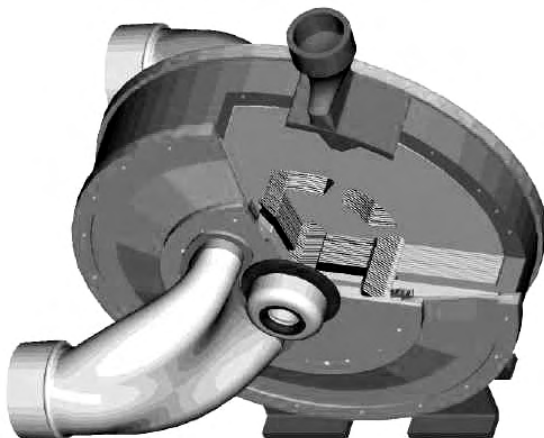


Fig. 1

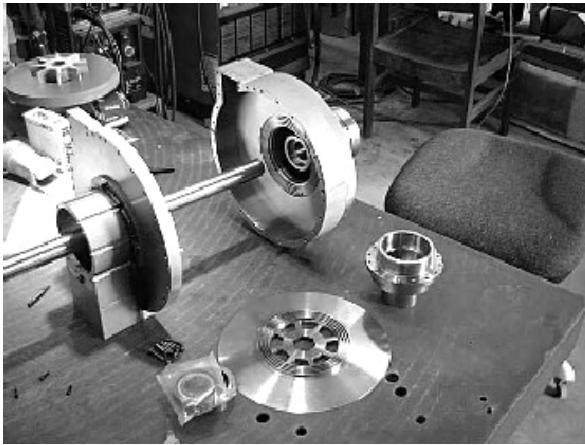


Fig. 2

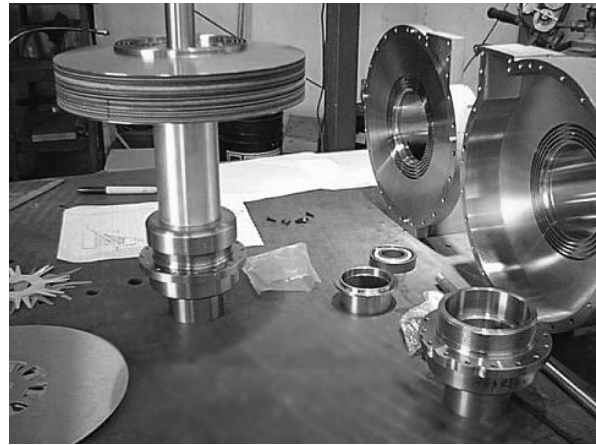


Fig. 3

Fig.2 and 3 also show Frank Germano's pictures

such an engine. It takes very little effort to conjure up a picture of a new world of industry and transportation made possible by the invention of such a device. "Revolutionary" seems a mild term to apply to it. Taking this as our starting point, we have design, constructed, and fully tested this amazing engine and pump. We are now ready to offer the Bladeless Boundary Disk Turbine and Pump to commercial markets...(BDT prototype engine, in CAD rendering, compliments Guy Letourneau, P.E. pictured to right - [click to view larger image of picture](#)).

"The Electrical Experimenter — The Tesla Gas Turbine"...

July, 1920

"Dr. Nikola Tesla, whom the readers of this publication know very well and whose amazing work in the various scientific fields is also universally recognized, again comes in the limelight with a remarkable explosive gasoline turbine perfected by him recently which he describes in detail in a patent just granted. This remarkable turbine does away with all the troubles and complexity to the former attempted types. Stated briefly, the invention consists in the production of a peculiar shape conduit, thru which the gases are admitted into the turbine, and which has the singular property of permitting their passage in that direction only; in other words, unidirectionally. This device when used in conjunction with the bladeless turbine produces an engine, which may be explosively operated by gasoline, alcohol, or other fuels and is absolutely devoid of all valves. It is the simplest internal combustion motor conceivable. Owing to the tremendous output of the turbine, one single disk being practically equivalent in performance to a whole bucket wheel, a very small machine of this kind is capable of developing an astonishing amount of power...

The upper part of the turbine casing has bolted to it a separate casting, the central cavity of which forms the combustion chamber. To prevent injury thru excessive heating, a water jacket may be used, or else water injection, or air-cooling, this all the more readily as very high temperatures are practicable.

The top of the casting is closed by a plate with a spark-plug inserted and in it's sides are screwed two of the valvular conduits communicating with the central chamber. One of these is, normally, open to the atmosphere while the other connects to the fuel source.

The bottom of the chamber terminates in a suitable nozzle, which consists of separate member of heat-resisting material. To regulate the influx of the explosive constituents and secure the proper mixture the air and gas conduits are equipped with regulating valves. The exhaust openings are in communication with a ventilator..."

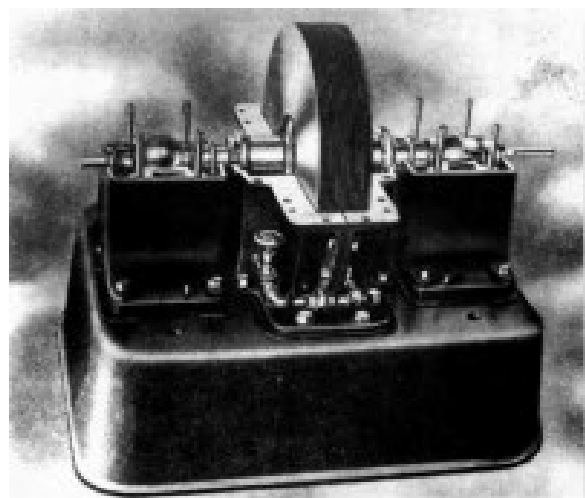


Fig. 4

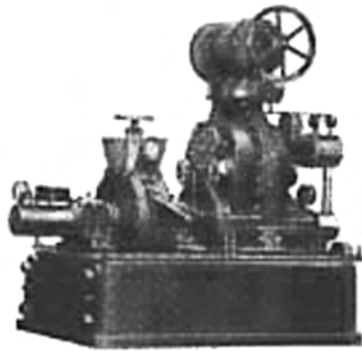


Fig. 5

On these two pictures Tesla's turbines with a wattage of 110 and 500 H.P. are shown

Quotes from Nikola Tesla, circa 1911...

"It is a radical departure in the sense that its success would mean the abandonment of the antiquated types of prime movers on which billions of dollars have been spent. Under such circumstances the progress must needs be slow and perhaps the greatest impediment is encountered in the prejudicial opinions created in the minds of experts by organized opposition."

"I have developed 110 horsepower with disks nine and three quarter inches in diameter and making a thickness of about two inches. Under proper conditions the performance might have been as much as 1,000 horsepower. In fact there is almost no limit to the mechanical performance of such a machine. This engine will work with gas, as in the usual type of explosion engine used in automobiles and airplanes, even better than it did with steam. Tests which I have conducted have shown that the rotary effort with gas is greater than with steam."

"It is the lightest prime mover ever produced and can be operated without trouble at red heat, thereby obtaining a very high economy in the transformation of energy".

Editor: we contacted the author of these devices, which are modern versions of Tesla's turbines and received a permission to publish this article composed from the material taken from his website. Frank confirmed the operability and high efficiency of the devices created by him, but did not directly pointed to the possibility of using these devices in autonomous electro-power plants. Evidently, if such a possibility does exist, then by combining an air compressor, a turbine and an electric generator it is possible to build a fully autonomous electric power station.

Letters to the editor

Dear Mr. Frolov,

Thank you very much for your very interesting article on the DNA and his four-dimensional character.

I think that in fact our investigations have a common point of contact: Both we are working on curvature with inverse numbers, so much in yours case when you expresses himself about of the..."Mathematical idea of the line curvature is a value inverse to the radius and measured in reverse meters: $r = 1/R [1/m]$ ", and in my case , when I affirm than ...", all fractions, are constituted by to exclusively rotation toward the right hand of the cycle $1/7 = 142857$ over himself and for this reason, are excluded of the conformation of the numerical matrix, the numbers: 0, 3, 6 and 9", and also when...."The fact of uppercase importance

is the increment of the mass of the electron with the acceleration of his velocity and his resulting undulatory mass-energetic propagation, which is fundamentally an torsion effect of the electron on oneself..."

Very much I would like to be able to reconcile our interests...

Best regards,

Cornelio Gonzalez

email: cgonzalezv@geo.net.co, 05.13.04

Editor: The details of this issue and other articles on four-dimensional resonance can be found on our website <http://www.faraday.ru/dna.html>

Viktor Schauberger's Atom Transforming Machine

Source:

Frank Germano's website <http://www.frank.germano.com/>

The Atom Transforming Machine — This note is taken from a special edition of "Mensch und Technik" vol 2 (1993) sec. 7.7.7 of notes from 15th July 1936 about Schauberger's work at the time:

"Today we began to assemble the atom-transforming machine. Tomorrow or the day after it will run for the first time.

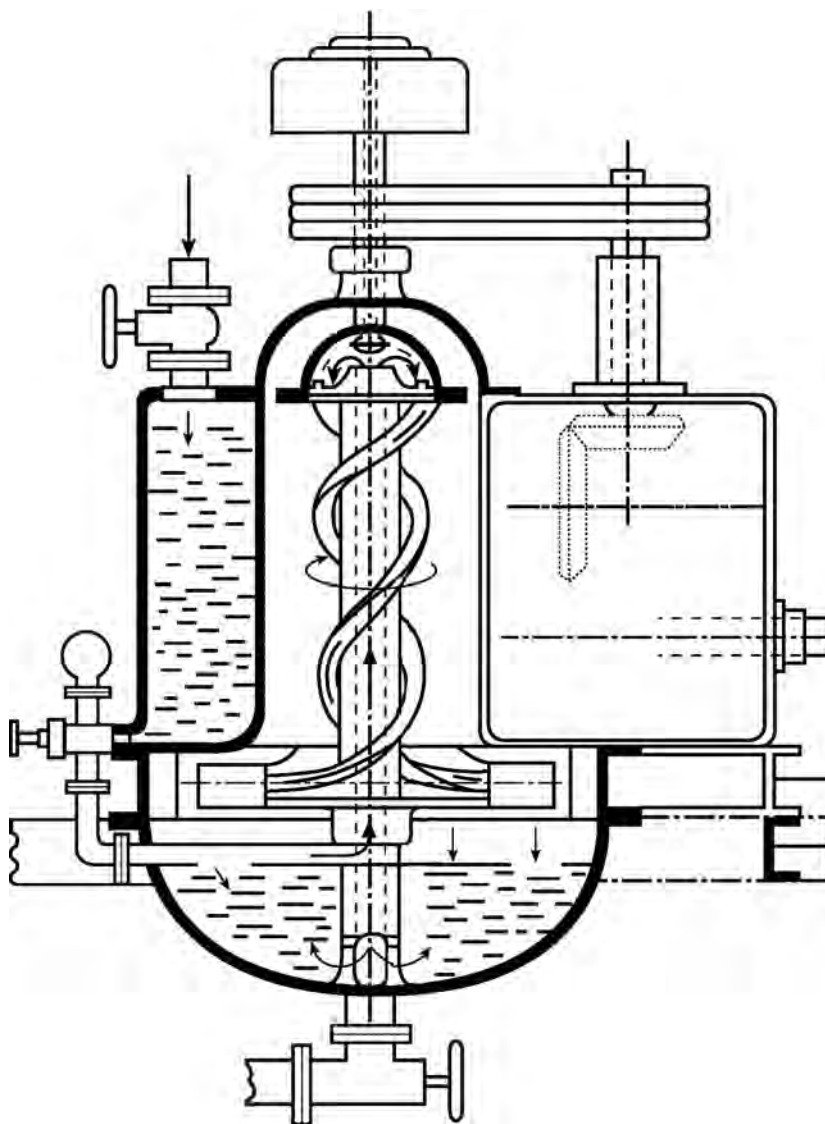


Fig. 1

Simple and true, that is the impression one gets when observing it. Unfortunately, in its present state we cannot make the upper part of the machine fully operational. The danger is too great. I cannot risk the lives of my co-workers. Fully operational, the machine must be remote-controlled, for either a violent thunderstorm or a cyclone will develop. If the organic H discharges itself downwards, then there is a short-circuit — a thunderstorm, whereas an upward discharge of H produces the celestial electromagnet, which is actuated at about 40,000 milli-amps, and with it the charging up of the celestial Plus + Minus, i. e. the cyclone. The physicist Renault produced a short-circuit, which incinerated him and his colleague in a matter of seconds. Perish the thought that it should first ignite on the TRANSVERSE axis ! It entirely depends on where the H discharges. On the transverse or vertical axis ? This determines the stronger pole, for here too a bipolarity is involved."

The French physicist Gerard Renault [c.1926] (operating under Viktor Schauberger's theories) had already occupied himself with the problem of obtaining electricity from the air. In his laboratory in Grenoble, he worked night and day on his invention, and even the

scant information that emerged publicly, created a sensation in scientific circles. One day, a machine stood in his workshop which was held to be a wonder. Day after day its wheels turned without any observer being able to determine whence the driving force originated. Neither steam, nor combustion gases, nor electrical motive forces could be detected. The machine stood on its base, completely insulated from the ground, and ran independently like a perpetuum mobile. For a while Renault enjoyed



the general wonderment, and then one day he said, "This machine is, in fact, driven by electricity, but with electricity from the air! I have solved the problem. With its practical application, in a few years we shall achieve a paradise on Earth." Viktor Schauberg-

er with the machine (operational), with the top cover removed — left.

The French Academy requested Renault to come to Paris so that he could demonstrate his invention there. The inventor agreed, hastening to the capital with his assistant, setting up his machine in the experiment theatre. Just before the beginning of the demonstration, he wanted to explain how it worked. His assistant was present. Suddenly there was a tremendous explosion, flames shot out of the doors and windows, and once the fire brigade had succeeded in extinguishing the fire, the machine was a heap of wreckage. Renault and his assistant died in the explosion.

(Extracted from the periodical *Der Weg* (7/11/1946, 1st year, no 48, p12) (and reprinted in "The Energy Evolution" edited by Calum Coats (2000) p125).



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THE NATURE OF THE ELECTRON

by **Lew Paxton PRICE**

From the theory developed by Lew Price and Mart Gibson



Owners and editors of scientific publications are increasingly publishing new theories that may challenge older ones. The owners and editors of New Energy Technologies have been foremost among these. We thank them for their open-minded attitude and for their courage in disseminating new ideas.

The absence of a functional and logical theory for the electron undermines our basic understanding of the foundations and consequent principles of our universe. Following is a visual model of the electron which may enable others to become more productive in their individual fields. Most particularly, it may provide a different view of the electron for those who are searching for the valuable new energy alternatives that may preserve the ecological health of our planet.

This article presents a part of a modern dynamic ether theory. The old ether theory portrayed a substance with very different characteristics, and the name ether has been given a connotation that tends to alienate those who see it. Consequently, the dynamic ether has been renamed nether which can be understood either as not ether or as the underlying substance in ancient Greek myth.

Background

In 1887, Albert Abraham Michelson and Edward William Morley performed an experiment with light in an attempt to prove the existence of ether, a substance through which light is transmitted as a wave. They believed that the earth was moving through a stationary ether so that there would be a fairly substantial relative velocity between this ether and the surface of

the earth. The experiment failed to show the expected magnitude of relative velocity. The relative velocity that was measured was too low for them to be certain that experimental error was not the cause.

At the time, there were two major schools of thought: (1) light that travels as a wave through an ether, and (2) light that is transmitted by particles moving through a vacuum. Although the absence of solid evidence of an ether did not prove its non-existence, the proponents of particulate light chose to conclude that it did so. When Albert Einstein introduced his theory of special relativity in 1905, most physicists considered it to be an alternative to wave theory.

Einstein's autobiographical notes, written when he was 67 years old, revealed that he had proposed special relativity to augment James Clerk Maxwell's work on wave theory, and had been working upon a wave theory for light before he published his special theory. Einstein continued his work on light as a wave for most of his remaining life. His special theory allowed for the possibility of light as wave with its second postulate which stated that the speed of light is a constant. This postulate was used because it was correct according to the empirical evidence of that time. Light as a wave has a constant velocity in any given medium. When light approaches a lens, it is traveling at high speed. In the lens, it slows down. When it leaves the lens, it resumes its higher speed. This is in accord with what a wave can do, but not in accord with what a particle can do.

By 1914, other experiments of the Michelson-Morley type had been performed which produced similar low figures for relative velocity. When Sagnac used a different experimental approach which proved the existence of an ether, it was said that Einstein did not com-

ment upon it. Perhaps this is true. He may have believed that whatever he said would have no effect upon the outcome of Sagnac's work, and he may have believed that it merely confirmed his own conviction that light traveled as a wave. Regardless, Sagnac's work was set aside and given an innocuous name, the "Sagnac effect". (See three articles in Vol 7, Issue 38, 2001, of Infinite Energy Magazine, one by A. G. Kelly, another by James DeMeo, and a third by Paulo N. Correa and Alexandra N. Correa.) Sagnac's work has proven to be indispensable to our modern navigational technology.

In the late 1920s, the concept of "spin" became an unwanted quality of the electron. It was an embarrassment to the physicists of the time because their theories could not account for it. To this day, accepted physics does not properly address this mystery. Electron spin, as is currently taught, is similar to angular momentum - which has gyroscopic properties, the same magnitude for all electrons, and appears to break the laws of conservation of momentum and energy by remaining at the same magnitude regardless of what happens to the electron. Until this time, no entity had been known to break the conservation laws.

This is what first drew my attention in May of 1965. I realized that the only known entities with "spin" that could conform to our conservation laws were vortices. The electron appears to be a tiny vortex. Einstein worked for many years in an attempt to discover a unified theory. He could have done so easily if he had first conceived of the electron as a vortex.

The Vortex

In the early 20th century, there were many concepts for an ether which could transmit light as a wave. Everyone thought that the nature of such an ether was very obscure at best. Yet, when one accepts the electron as a vortex, the nature of the ether becomes apparent. This ether is, of course, a dynamic ether, which is why I have chosen to call it "nether" to distinguish it from the old idea of a stationary ether.

A vortex is formed when a fluid with the property of inertia approaches a point and, upon arriving at that point, attempts to turn abruptly at approximately 90 degrees to its original direction of motion. The law of conservation of momentum forces the fluid to take a curved path to negotiate this turn. If we assume that the electron is a vortex, the medium of which it is composed would be the nether itself. To become a vortex, this nether would, of necessity, be a fluid with the property of inertia that is attempt-

ing to turn in a direction that is approximately 90 degrees to its original direction of motion.

Well-known examples of vortices are the whirlpool, the whirlwind, the tornado, the waterspout, the hurricane, and the typhoon. Each of these is composed of a medium which is under pressure and has a relative vacuum at its center. The pressure difference between the surrounding medium and the relative vacuum creates the necessary energy for the vortex to continue to exist while whirling at the same rate. When a tornado devastates a landscape it does not slow its rate of rotation except, perhaps, momentarily and very slightly. If we were to view it as a solid entity which spins, it would appear to be breaking the laws of conservation of momentum and energy. Yet, in reality, it is these same laws which create it.

Any true vortex has a "mouth" which pulls in the medium of which it is composed and, because the medium has inertia, the medium tends to pull the vortex in the direction in which its mouth is pointed. A tornado will hug the earth's surface once its mouth is against ground. It is being pulled downward by the inertia of its medium. This quality is apparent in the electron when it curves after being thrown into a magnetic field and when it moves along a wire that is moving at right angles through a magnetic field. The magnetic field adjusts the direction of the electron's mouth and the mouth pulls the electron along.

Such a vortex uses centrifugal force against the pressure of its medium to maintain its shape and size and it regulates itself accordingly. The funnel of the tornado is an example of this quality. Thus, the tornado is self-regulating - as is the electron.

The Fourth Dimension

The fact that an electron can and does face any direction within our space of three dimensions seems to indicate that the direction in which the nether must move to create a vortex is one that is at ninety degrees to our three dimensions of space. In Einstein's theory of gravity, he postulates a space-time of four united dimensions. In nether theory, there is a "plane" of three spatial dimensions which move along a separate dimension of time. This is because the concept of the electron as a vortex dictates that such should be the case. The fourth dimension appears to be where the nether goes after arriving at the electron center.

As confirmation of this separation of the fourth dimension, gravity as explained in nether theory

(see the *An Introduction to Gravity* by this author published by New Energy Technologies) is one that is easily visualized and understood. This new theory of gravity has most of the qualities of Einstein's gravity in that (1) gravity appears to attract light, (2) gravity lensing exists, and (3) gravity affects the passage of time.

Einstein's curved space cannot be truly visualized and has been found wanting according to the latest observations showing that space is not curved. The nether theory of gravity shows that space is Euclidean in nature and is not curved. Einstein's work was superb, considering the facts available at the time.

The same Lorentz transforms that are found in relativity have been derived easily in nether theory, indicating that relativity is correct in many ways, but for reasons other than those postulated by Einstein.

Vortices and Mass

Subatomic "particles" are actually vortices or combinations of vortices composed of nether moving into the fourth dimension. Because these are vortices which appear to be particles, I call them "vortices". What is known as "mass" is actually the rate of nether "Mass" that enters a vortex within a period of time.

Perhaps the best confirmation of a separate fourth dimension comes from another little-known quality of a vortex. The resultant inflow of the vortex medium, at any point, is always at approximately 45 degrees from a line drawn from the vortex center to that point. This requires a lot of theory and math to explain, but it can be seen when one drains a bathtub or when one views a satellite picture of a hurricane. Light is composed of waves of nether acceleration at right angles to its direction of travel. The nether inflow that creates micro-gravity is in a direct line toward the gravitating body.

The actual resultant nether inflow is at 45 degrees to both the acceleration wave and the direct inflow. The acceleration waves near the electron center and the direct inflow both result in a velocity that is "c", the speed of light. The resultant of these two vectors is the product of the speed of light and the square root of two. Thus, the reactive speed of the nether is actually $(21/2)c$. Light moves at c because it is the transverse vector of the incoming resultant.

In other words, the velocity of the resultant nether

inflow into the electron at its center is " $(21/2)c$ " while the total "Mass" of inflowing nether is computed at "c". This means that the kinetic energy of the inflow can be expressed as

$$E_k = (1/2)mv^2 = (1/2) m [(21/2)c]^2 = mc^2$$

in which " E_k " is kinetic energy and " m " is the mass of the electron. This equation is the mass/energy equivalency used in general relativity, but nether theory shows visually why it is correct.

The Electron

The electron is created by a hole opening into the fourth dimension. The hole is first created by excessive energy existing at a point. For instance, when two gamma rays with parallel polarization meet, they create a bulge that ruptures our space and creates two holes into the fourth dimension. Nether flows into the holes and holds them open with centrifugal force against the nether pressure which attempts to close them. At one of the holes is the electron, formed of nether flow into one direction of the fourth dimension.

At the other is the positron, formed of nether flow into the other direction of the fourth dimension. The electron is formed as matter and the positron is formed as antimatter. The two mirror-vortices must be formed simultaneously because one is the equal and opposite reaction of the other.

The equation for centrifugal force is Mv^2/r where "M" is nether "Mass" and "r" is the hole's radius. If something attempts to reduce the nether inflow slightly, the centrifugal force is lessened and the pressure of the surrounding nether reduces the radius of the hole. Reducing the radius causes the centrifugal force to increase so that the electron returns to its original state. The opposite occurs if the inflow is accelerated slightly. So, like the tornado, the electron is self-governing and dynamically stable. There is more to be said about this, but it is beyond the scope of this article.

If the foregoing is accepted, the electron can be visualized in the mind. First, it is a hole that can be considered a little circle hanging in space. On the inflow side which I call the "mouth", nether is entering at the speed of light and with a resultant velocity that is the product of the square root of two and the speed of light.

On the other side, nether is behaving normally. The electron is moving in the direction its mouth is pointing. It can alter its direction of motion when there is a reason for it to do so. The inflow is most pronounced from the "sides" because it is a vortex. And

the vortex has influence that exists to the limit of our universe just as every vortex has an influence that extends to the limit of its medium - even though its effects may be overshadowed by those of other influences.

Schwartzschild derived an equation that shows the distance from the center of a black hole from which light will not be able to escape. Schwartzschild's equation is easily derived from nether theory and with fewer steps than were used in the original derivation. At the electron center, the radial inflow is at the speed of light. So the equation for the Schwartzschild radius, originally meant for black holes, is applicable to the electron center. When Schwartzschild's equation is used in this manner, we see that the electron center and the hole into the fourth dimension are approximately equal to 10⁻⁵⁷ meter.

According to most textbooks on physics, the radius of a typical atomic nucleus is approximately 10⁻¹⁵ meter, and radius of a typical atom is approximately 10⁻¹⁰ meter. This leaves a space between the atomic nucleus and its outer electron shell that is slightly less than 10⁻¹⁰ meter. This space is approximately 10⁴⁷ times as large as the radius of the electron hole, which provides an indication of the vast distances, proportionally, between electrons in a typical atom.

Charge

The resultant inflow of nether moving toward the electron center at any point outside that center moves at 45 degrees to a line (radial) drawn from that center to the point. It is this movement that creates what is called "charge". Through this same point is a vector that is movement along the radial toward the center. This vector creates what I call micro-gravity. There is another vector at 90 degrees from the radial that becomes the reason for a lightwave of nether acceleration when the light source (an electron) changes direction.

Like charges repel because electrons in the same vicinity tend to be in a common environment of nether movement from the same direction. This nether movement tends to orient the electron mouths to point toward the oncoming nether. This means that, on average, the electrons are oriented to repel one another. Should one electron be pointed 180 degrees from the direction in which its neighbor is pointed, there is attraction rather than repulsion. This seldom happens, however.

When electrons are pointed in the same general di-

rection, their two inflows act like two gears that are rotating in the same direction. They interfere with and repel one another because close proximity causes the incoming nether to be compressed. When opposite charges attract, it is because their inflows are like two gears meshing and they are pulling on the same body of nether.

Magnetism

When electrons move through a wire, their mouths are pointed in the direction of their movement. This causes the 45 degree inflow of nether to create a "flux field" about the wire. If the wire is helical, as is the case with wire used to make an electromagnet, the inflow must be more compressed inside the helix than outside the helix. This compression is extreme in the case of a high-intensity magnet and can cause the magnet to explode.

Nether is easily compressed, but prefers to expand or to remain at the same pressure throughout. It is this preference that causes like poles of two magnets to repel and unlike poles to attract. The flux lines seen near magnets are lines where nether flows inward at a common acceleration. When flux lines are closely spaced, they indicate places where nether density is high. When flux lines are widely spaced they indicate places where nether density is low. Nether is forced to compress where two like poles meet, so the magnets attempt to move apart. Nether is less compressed when two unlike poles are near one another, so the magnets attempt to join and become one.

Nether

From the nature of the electron and light, it appears that nether has the following qualities.

1. It is a perfect fluid (not composed of particles).
2. It is frictionless.
3. It has inertia.
4. It is compressible.
5. It acts in a manner that conserves energy.

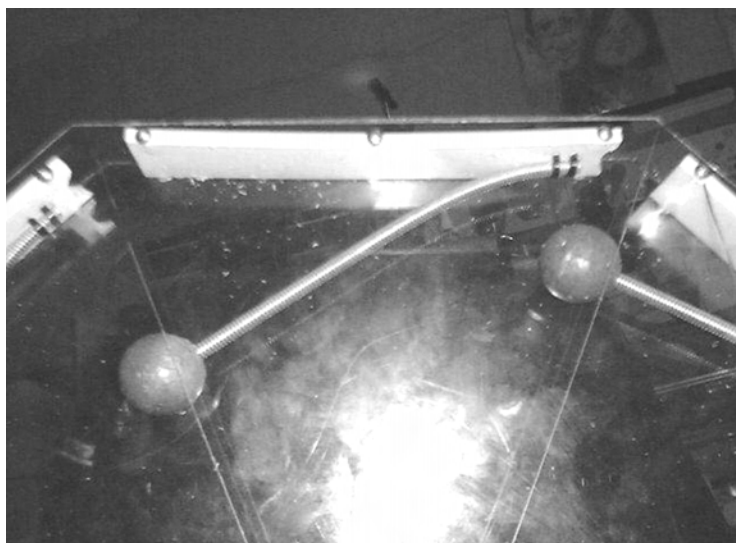
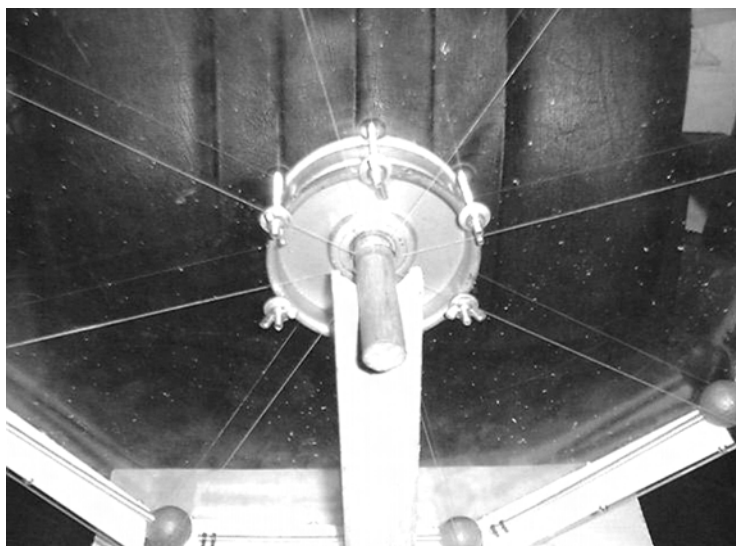
The nature of light is a consequence of the electron in motion and, ideally, should be provided with this material. However, to explain it would require a separate article. For those who have computers, further information is available from my website which can be found by using "search" with my name.

Perhaps the insights provided in this article will aid those who are attempting to find a practical new energy alternative. They are the ones who will ultimately save our planet

Gravity Conversion Rotary Device

<http://www.fieldlines.com/story/>

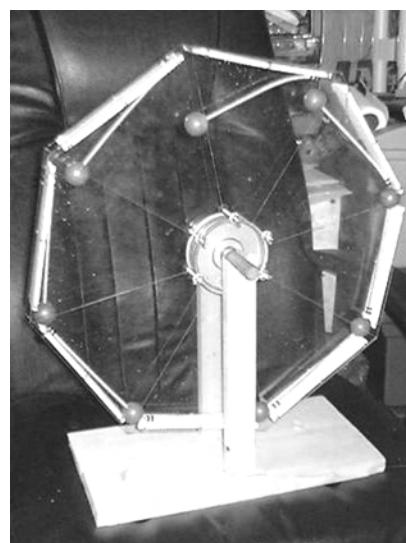
Does it work? I am fairly certain that there is an appreciable number of individuals that already can and may prove it to you better than I can! This device is not as easy to duplicate as it might first appear, in that not all springs are created equal, I have found. Even those of the same type from the same manufacturer will vary. It took me some painstaking trial and error to match up the exact weights to get the consistent deviations in spring flex to all segments. In retrospect, I suspect that slightly softer springs of small variations in lateral tension strength would still work given that pegs be installed at consistent and fixed locations in the wheel to stop the arms from moving inward too far. This, I think would be better than designing the wheel around the measured bend distance of the spring arms at



various locations around the wheel as I did. I used 4oz. lead balls, 3/16" O.D. springs found at a local Big Lots store that served as the long handles to magnetic pick up tools. As I look back at the circumstances relating to the way I received this idea and what has happened since, I am quite sure that it is GOD'S will that such simple exposition of such a device that goes against the supposed "laws" of science is released at this time! I am not the first, I know that. I am not the best, I know that. I am not really much of anything other than a follower of Christ, I KNOW that! This device is not mine but is for anyone that wishes to replicate it. I can already see many ways of improving upon it in various ways...but I am not even in the ballpark of what some of you "in depth" researchers may come up with! GOD bless all of you dear readers in Christ this day! There is yet time for the doubting and lost children of GOD to turn and follow GOD'S PERFECT LAWS which are already written on the hearts and minds of HIS children rather than man's imperfect "laws of science".

Peace.

T.S.



A Device for Converting Potential Energy into Mechanical Energy

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Summary

The present device refers to machine building, in particular to devices of inner potential energy of resilient static components which are deformed by it into mechanical energy.

A base source of mechanical energy has been created, which is a power module generating environmentally friendly energy for several decades until the tension of the resilient elements of the module are compensated for by metal fatigue or until they get physically worn out. External energy is used by the power module only once to deform its resilient elements when the module is prepared for operation.

Patent Priority and Copyright Protection

The device is protected by Russian Federation patent №20888800; patent priority of March, 6, 1994

The Essence of the Proposed Device

The device consists of a case, in which two four-armed asymmetric capstans are mounted. Each capstan has two inner and two external arms, one of the ends of which is n-shaped, an axis, and common bearings with its pins, springs, screws and screw-nuts; the arms of the capstans can also be made of resilient elements, for example, in the form of flat springs.

The operation of the present device results in an increase in time and the path of the active continuous movement of the device under the influence of the forces of resilience of solid bodies when performing work on transforming potential static energy into mechanical work (energy) of the active and continuous movement of the object.

Such a result is achieved by means of a special transformation, which is obtained through constant interaction of the moving device and the two four-armed asymmetric capstans, which are installed inside its case. These capstans are constantly filled with the potential energy of resilience and are in a state of constant mutual compensation of the support forces of the capstans F_1 and F_2 , at the ends of the external arms of which act the forces of the resilient momentum of such devices as springs, screws and screw-nuts. This creates two constantly counter-directed torques M of the capstans, and leads to the creation of a constantly acting moving force F_{mov} , which exceeds the weight of the moving device (object), which, in turn, provides for the active continuous movement of the device.

The filling of the capstans with a resilient-kind of potential energy is performed at the expense of a one-time force impulse when preparing the power module for operation, for example, using the muscular force of a man. During this process, the free ends of the external arms of the capstans via the deformed springs are acted on by means of a screw and a screw-nut in such a way that one of the pairs is compressed while the other one is released. Thus, the torques of the capstans M are created, each of which is transmitted via the axis of the capstan to its inner arm. Taking into consideration that the inner arms are asymmetrical, the support forces created by them

differ in values and are proportional to the lengths of the inner arms. As a result, two coaxial counter-directional support forces, originating from both the capstans, act on every pin of the common bearing. These forces differ in values and constantly compensate each other, creating the F_p resulting forces at the pins of the bearings. Through the pins, the resulting forces interact with the case of the device. They act in a single direction, creating a constantly acting force F_{mov} , which exceeds the values of the weight of the device. It is this force that disturbs the equilibrium of the device for many decades.

Fields of Application (Science, Industry and Other Fields)

The power module can be used for rotating the drives of generators at heat and hydroelectric power stations, instead of the existing steam- and hydro-turbines, and internal combustion engines, and also in boiler-houses for creating of local electricity and heat supply systems for industrial buildings, cities and

their districts; the module can be used as well in all types of vehicles. Several power modules can be used simultaneously for building up power.

The Volume of Investments Needed for Practical Implementation of the Device

The volume of investment needed for practical implementation of the invention totals 75,000 roubles (\$2600).

Degree of Readiness of the Device

The device is currently at the working draft stage.

Contact Information

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A Manual for Designing Ether-based Engines and Devices of Inner-ether Energy

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The term "ether-based motion" is not a figurative expression but a theoretically substantiated fact, the existence of which has been proven by numerous experiments. The existence of ether is also not a hypothesis, but a theorem, based on the foundation of classical electrodynamics and the laws of energy conservation (the laws of impulse and energy conservation). In other words, it is a law of nature, which should be simply taken for granted. Ether is a peculiar type of matter, which is mistakenly neglected by relative physicists but which was known to Maxwell and Lawrence, the pioneers of classical etherodynamics. Ether differs from substance and field, which are central notions of classical etherodynamics and physics on the whole. Strange as it may seem, but the saying «Physics is impossible without ether» belongs to Einstein. The relativists, who expelled ether

from science, considered themselves to be wiser than Maxwell, Lawrence and Einstein taken together!

Some of the main lines of research in ether physics, which seem to be promising in terms of practical application will be considered in this article.

In an ideal circuit of a certain kind, in which both ohmic resistance and wave radiation into external space would be absent, reactive currents and voltage would circulate infinitely without consuming any energy from power sources. An ether-based force would be present, which could perform work, in particular set a device into accelerated motion. Some scientists believe that such motion must be performed at the expense of the energy accumulated inside a resonator, and restituted by a local power source

of some kind. But they are mistaken. The principle of relativity prohibits an ether-based force to perform work by means of the energy of any material energy source (see a proof of this energy theorem at <http://www.tts.lt/~nara/chast2.htm> or, for its more popular version, see <http://www.tts.lt/~nara/ruspopul.htm> or magazine [1]). Energy comes from ether.

It is worth mentioning that in Lawrence's ether theory of relativity (ETR) the principle of relativity is formulated in this way: "One cannot detect the speed of uniform rectilinear motion with respect to ether without quitting the boundaries of electromagnetic interactions (both weak and strong)". All the experiments carried out (Michelson's experiment and others) do not quit the boundaries of such interaction and that is why their result is negative. In order to detect ether, we first need to discover the super-light interactions, which are possible in Lawrence's ETR but impossible in Einstein's Light Theory of Relativity (LTR). The idea of the fundamental impossibility of such interactions is a mistake, which is based on LTR. According to the corollary of the theorem of the existence of ether (<http://www.tts.lt/~nara/basis/basis.htm>), Einstein's LTR does not agree with the law of conservation of energy. The fallacy of Einstein's LTR was not detected until ether-based forces were discovered. We should stress that Lawrence considered his theory of ether to be correct but not Einstein's LTR [2]. The discovery of ether-based motion shows that Lawrence was right. It also shows that relativists were wrong when they let the physics of the XXth century go off in the wrong direction.

So, ideally, in order to obtain an ether-based force we do not need to spend energy from any material (field) power sources. This can be compared to a photon rocket, the thrust of which can be calculated proceeding from the formula $F = Na/c$, where Na is the active power supplied by a power source. In order to obtain force in an ideal 1 kg photon rocket, a power of about three gigawatts must be spent. This is the exact power generated by a large power plant. An ideal ether-based resonator would not spend any active power at all due to the fact that reactive power means circulation of currents and voltages, the real energy output being absent.

However, there will inevitably be losses in real resonators, connected with the dispersion of energy in the form of heat-emanating electric waves, which are produced when ohmic resistance is present. Such losses cannot be fully excluded, but can be reduced to a minimum by means of selecting adequate devices and implementing various engineering methods. The Q -quality of an oscillating system is a very important value connected with its energy losses.

The active power needed to create an ether-based force is Q times less than the power needed to create the equal thrust of a photon rocket. If a photon rocket, which spends colossal amounts of energy, is considered by many experts to be a promising space vehicle of the future, the use of an ether-based thrust seems to be more efficient.

The use of a Q -quality ranging from 105 to 106 (which is not such a difficult task to fulfill) would be sufficient to make the ether-based principle a competitive method of generating thrust in the field of air and space vehicles, while if a Q -quality ranging from 107 to 109 were, this principle would drive out all the other transportation and energy technologies. For example, let us first calculate an n-shaped resonator (see Fig. 1), the construction of which is close to an ideal one, and then a real resonator made of aluminum.

The design force is $F = 270$ kg. As we see, this resonator having the dimensions of a medium-sized backpack is able to lift three middle-weight grown-up persons off the ground. It can be used, for example, as an engine for a double-seat vehicle able to take off vertically, hover motionless and fly at the speed of a light aircraft. And the amount of energy consumed is just 800 W, the design Q -factor being 109. This power is only needed to maintain current oscillations and the voltage inside the resonator. The energy needed to move, to overcome the resistance of the environment and to perform work produced by the ether-based force obtained (270 kg), according to a new energy theorem of classical etherodynamics, (see <http://www.tts.lt/~nara/chast2.htm>) comes from ether, a form of matter, the existence of which has been determined by another new theorem of classical electrody-namics – the ether theorem (see <http://www.tts.lt/~nara/basis/basis.htm>). A power meter evaluating the power needed to feed the resonator (if it is present) will always indicate 800 W, whether it is idling or flying at maximum speed. Such behavior of the power

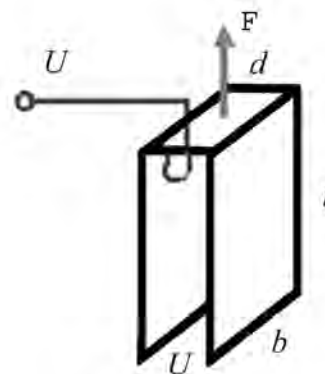


Fig. 1

An n-shaped resonator with a connection loop

Table 1

Dependence of force and other parameters on the wavelength for the n-shaped resonator

Wavelength, λ , m		0.1	2	4	6	20	50	100	1000
Force, kg, T, kT		0,7 kg	270 kg	1,08 T	2,44 T	27 T	169 T	677 T	68 kT
Dimensions	width d , m	0,007	0,14	0,28	0,43	1,43	3,57	7,14	71,4
	length and height, m	0,021	0,43	0,84	1,29	4,29	10,7	21,4	214
Volume, m ³		$3 \cdot 10^{-6}$	0,026	0,2	0,7	26	410	3270	3270000
Power consumed at $Q = 109$, kW		0,002	0,8	3,3	7,3	81	508	2000	$2 \cdot 10^5$
Force cubic density, T/m ³		200	10,4	5,4	3,5	1	0,4	0,2	0,02
Acceleration at a filled density of 1000 kg/m ³ , g		200g	10g	5.4g	3.5g	1g			
Acceleration at a filled density of 1 kg/m ³ (in a vacuum), g						1000g	410g	210g	21g

meter is conditioned by one of the most fundamental principles of nature – the principle of relativity. To obtain these 800 Watts, an autonomous power source, based on resonators can be constructed, thus making it possible to renounce any substantial power source. Note that when we say that we must renounce a “substantial” power source, we do not mean a “material” power source since ether is also a form of matter.

It can be seen from the table that if the wavelength increases, the geometrical dimensions of a resonator will increase proportionally, the force increases quadratically but the cubic density of the force falls. This is why when the dimensions are large, hollow wire-frame constructions must be used, which will be useful for the devices intended to be used in space. Such devices would provide the force sufficient for transporting freights with a weight of several thousand tons.

The Q -factor value of 109 selected by us is very high yet it is quite achievable. However, if the value is reduced by a factor of 100 down to a value of 107, this will not lead to exceeding the energy consumed, which is observed with ordinary means of ground, air and space transportation.

Let us return to our resonator working with λ equaling 2 m. If we make it of copper or aluminum, the Q -factor at a normal temperature will be about 104.

In order to recreate the previous tractive force (270 kr) under these conditions, compensating heat losses, one has to spend a power of about 30 MW (supplied by a well-sized power station), which is, of course, unacceptable. This only serves to underline the necessity for transition to superconductivity technologies.

However, nothing can stop us from feeding a power of about 100 W into such a resonator. This will yield a force equaling about 1 gram, which is quite easy to measure. If such a resonator is made of a bent 0,2 mm-thick aluminum sheet, it will obtain an acceleration of 5 cm/sec² under the influence of this force, which is sufficient for building a floating or sliding (rolling) prototype. A rotator with a fully autonomous power supply can also be constructed, which will rotate at a speed of 10 – 50 rot/min, refuting the erroneous opinion that ether does not exist.

It is worth noting that a single n-shaped resonator will be subjected to considerable energy losses spent on radiating electromagnetic waves. That is why, in order to increase the Q -factor, resonators should be combined into batteries containing an even number of elements (see Fig.2). The currents in the adjacent elements will change in antiphase, which will lead to mutual damping of the electromagnetic waves emanated by the elements. We can choose another way, for example, by implementing cylindrical resonators instead of the flat ones. These resonators have much fewer radiation losses. It should be mentioned that resonator batteries

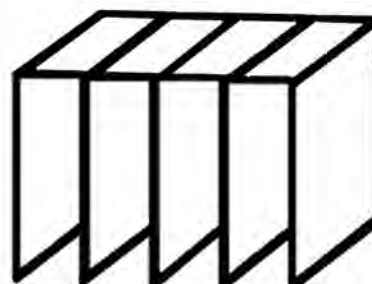


Fig. 2.
Resonators combined into a battery

Table 2

Dependence of an n-shaped resonator's parameters on the wavelength ranging from microwave to optical range

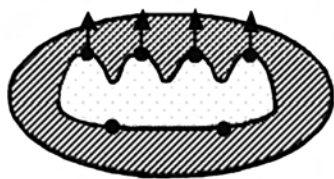
Wavelength, λ , m	0.1	1 cm	1 mm	100 micron	10 micron	1 micron
Force of a single resonator	0,7 kg	7 g	7 mg	0,7 mg	70 microgram	7 microgram
Force cubic density, T/m ³	200	2000	20 000	200 000	2*10 ⁶	2*10 ⁷
Number of resonators, 1/cm ³	-	305	3*10 ⁵	3*10 ⁸	3*10 ¹¹	3*10 ¹⁴

(blocks) are used in magnetron-type devices, the only difference being that their circular symmetry cannot be used for ether-based thrust. An asymmetric block of resonators, built according to magnetron technology, can be realized, as is shown in Fig. 3.

Up to the present moment, we have been discussing systems based on using single resonators united into batteries only due to necessity in order to reduce radiation losses. Their main problem is caused by a decrease in the cubic density of the force with an increase in size, which leads to reduction of the efficiency of the method when large forces are obtained.

But there is another and more promising principle, which seems to yield great possibilities. High values can be obtained by combining a multitude (thousands and millions) of small-sized resonators into modules meant for design forces and built according to microchip technology. And this may reveal boundless opportunities. Let us turn to Table 2. We see that in a range of wavelengths of from 0.1 to 0.000001 m, the cubic density of the force increases from 200 T to 20 MT in terms of a cubic meter of the volume occupied by the resonators.

Since up to the present moment we have been considering the radio-frequency region, we will not exceed its bounds in spite of the fact that in optical range the values of force densities are several orders greater. If the wavelength is 1 mm (see the third column of the table), the density of the force reaches a value of 20 kilotons per cubic meter. This means that a device able to lift a 100-kg person off the ground would take up a volume of just about 5 cm³ (half a pencil). It would contain half a million elementary resonators and would draw a power of 300 kW at a Q-factor of 109.

**Fig. 3.**

Sectional view of the resonance chamber of a possible ether-based engine

So, here are the possibilities for the creation of a new class of aircraft in the form of a special belt or in the form of «flying» boots.

The device, the engine of which consists of resonators and has a total volume of 5 m³ (in infra-red range it would be 5 liters), would at a stretch transfer hundreds of thousands of cubic meters of water needed to irrigate a desert or the surface of another planet. These are things still inaccessible for our civilization but which are «a piece of cake» for the civilization of the future.

Thus, we have considered the possibilities for practical application of resonator systems creating ether-based forces and this has made it possible for us to clearly see how real they are.

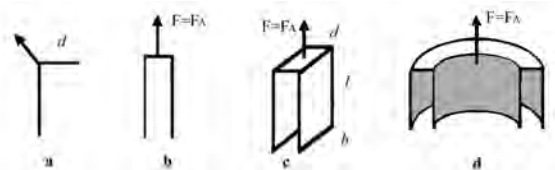
But the main thing (at least at the initial stage) is that we have calculated the main parameters of a prototype which makes it possible to demonstrate an ether-based force in action.

The result of an experiment carried out by the author of the present article proves the efficiency of a device of this construction. The details of this experiment are described in an article «Detecting Ether-Based Motion», which can be found on site <http://www.tts.lt/~nara/zamet/opyt/opyt.htm>.

Resonators of this kind (Fig. 4) were used in a series of successful experiments on detecting ether-based motion (see <http://www.tts.lt/~nara/zamet/opyt/opyt.htm>).

References

- [1] G.P. Ivanov, Consciousness and Physical Reality, № 1, 2002, p. 21
- [2] G.A. Lawrence, A Theory of Electrons.

**Fig. 4**

b, l, d, - geometric dimensions

How To Correctly Calculate the Efficiency of a “Perpetuum Mobile” (Magnetron Efficiency)

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Niels Bohr was one of the greatest scientists, whose contribution to world science is truly invaluable. Today, it is known to everybody that a progressively moving electric charge is an element of electric current creating an electromagnetic field. The electromagnetic field created by the electric charge is similar to that created by a conductor with current. Bohr became interested in the problem of whether the magnetic field of the electron will be present, if the charge is not moving forward, but is rotating, the spin being directed either way. Today, any physicist will tell you right away that the magnetic field (magnetic moment) created by a spinning electric charge is called a «Bohr magneton» (this concept includes the notion of the «spinning moment»). Moreover, it is well-known to any physicist that the magnetic fields created by these two types of movement of the electron differ in their properties. The vectors of these magnetic fields are always directed orthogonally. And what is more interesting, the magnetic field of any electric charge is always complex, which means that it is composed of two perpendicular components having different qualities, corresponding to the progressive and rotational types of movement of the electric charge. However, modern manuals tell us nothing about this fact: the magnetic field of a dynamic electric charge is usually represented by a single vector corresponding either to the progressive motion of the charge or to Bohr's rotational spin-magneton. In many cases, the Bohr magneton is considered to be a strictly theoretical notion, since it is still not clear how it can be used for constructing operating devices.

It will be difficult for modern physicists to comprehend that the magnetic field produced by a dynamic charge (electron) is complex. In order to redress the situation, we need to eradicate some false notions, which constitute the foundation of modern science and which are used by scientists as absolutely correct. Such delusions sometimes lead scientists to absolutely absurd conclusions, compromising their research. Particularly, in some scientific publications there have recently appeared many articles reporting on various devices which really produce more energy than is spent on their generation. This means that the efficiency of such devices exceeds unity! It is obvious that such declarations must be given a more precise definition. And it is at this very point that most physicists get annoyed. Most of them clearly not realize how one should calculate the efficiency, defining it as a ratio of the useful power to the power spent, and then multiplying the fraction received by 100%. As a result, they get hundreds or thousands of percents, describing the efficiency of the process of dynamic energy conversion. However, such calculations are false.

In order to find out what is the main mistake committed by these scientists, let us consider an electronic device called a «magnetron» invented in 1937. This very device is used in all microwave ovens so popular today. The magnetron does not obey Ohm's law since it works in a crossed electro-magnetic field, while its anodic current equals zero. It is impossible to describe all the details of a magnetron's operation, since

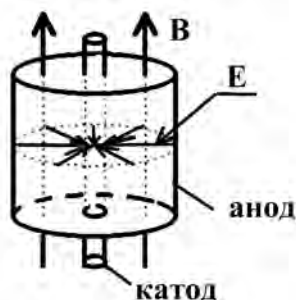


Fig. 1

A schematic view of the magnetron, Cathode, Anode

such a description normally takes several lectures at a university. That is why we will only outline the main principles of this device (shown in Fig. 1).

The magnetron almost always works at values of magnetic induction exceeding V_{tw} , i.e. exceeding a value of 1 T. This is a very high value. Such can be the value of magnetic induction inside the core of a 500 W transformer. The V_{tw} parameter at which electrons leaving the cathode cannot reach the anode starts at a value of 1 T even with the lowest-powered magnetrons (Fig.2). Consequently, under such conditions the anode electric circuit is actually broken. Only a few electrons can reach the anode, having left the tremendous flow and broken away from the rotor. Even in extreme cases the anode current created cannot exceed a value of several microamperes (Fig.3). It is clear that under no circumstances Ohm's law can be applied here.

In the most popular models of microwave ovens, the magnetron is inserted inside an electric magnet (a solenoid) with a core. The solenoid consumes an output power of more than 1 kW from the mains in order to create the magnetic field needed. Let us recall once again that such a magnetic induction value (1 Tesla) can be compared to that of a transformer with an output of no less than 500 kW. Thus, in order to create a magnetic field inside a magnetron, the electric magnet draws more than 1 kW of power from the mains, while the magnetron produces about 1 kW of power for heating up food inside the oven. As everyone knows, this is what happens practice every time we switch on a microwave oven.

And now for the most important part. Some faculties of electrotechnical universities have laboratory classes in their curricula devoted to the study the magnetron's characteristics. In fact, these lessons are aimed at brainwashing the students in order to create the "proper" understanding of the magnetron's main operation principles and to teach

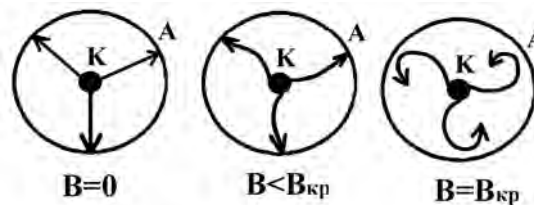


Fig. 2

The influence of the magnetic field on the trajectory of the electron (the V vector is directed towards the reader).

$$V = V_{tw}$$

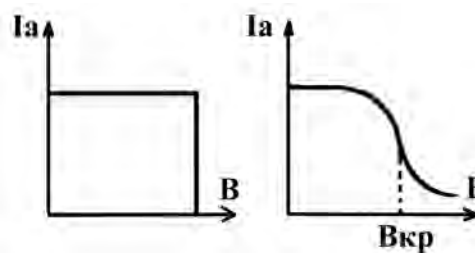


Fig. 3

A model diagram of an ideal (a) and the real (b) overflow characteristic of the magnetron.)

how to correctly calculate the efficiency factor so that it never exceeds unity. It is worth noting that instead of solenoid electromagnets constant magnets are used for carrying out the experiments. Such a device was shown to the author of this article in the early 70s of the last century, when he himself was a student. It was a time when the best constant magnets available (ferrites), having a residual magnetic induction of no less than 1 T, took up a volume of 1 cubic meter. It is not so hard to imagine that the laboratory magnetron device intended for brainwashing this author had to deal with, took up the volume of a standard-sized table. Thus, no external energy was needed to create a strong magnetic field inside the magnetron. Then, an anodic power source (for example, a galvanic battery) was connected to the device, creating an output of about 1000 V. Since the anodic current of the magnetron equals zero, the power drawn by it from the anodic power source, which was calculated as a product of multiplying of the current by the voltage ($P=IU$), also equaled zero. It did not matter whether the battery was connected or not – no difference in the work of the magnetron was observed. A nichrome spiral was used as a load to which the power generated by the magnetron was directed. The spiral was red hot. The measuring devices indicated an output, or useful, power of 300 W! This means that in the laboratory experiment discussed the input power was 0 W, while the output power amounted to

300 W. In order to calculate the efficiency factor, the output power was divided by the input power. This resulted in a completely absurd conclusion. The low amount of power spent to heat up the cathode could not be used to explain the result since a non-incandescent cathode could be used instead (as in electric tubes with cold cathodes).

At the same time, any microwave oven user manual will tell you that a magnetron's efficiency factor reaches 80%. This is a real value, which can be calculated using the following formula:

$$\text{Efficiency} = \text{Work useful} / (\text{Work useful} + \text{Work spent}) \cdot 100 \%$$

Here the Work useful + Work spent is the FULL power. By "power spent" we mean the power needed to create CONDITIONS under which it is possible to extract a large amount of power (energy) from a physical body (of Matter-Nature-Universe). Whether we like it or not, a galvanic battery always spends energy inside itself (during the chemical reaction taking place) in order to maintain a high voltage on its terminal posts. A constant magnet also creates a strong magnetic field at the expense of its INTERNAL work (the output or energy). Such CONDITIONS are created to extract the power of the electric-plasma rotor's electrons inside a magnetron.

At the same time, nothing prevents us from transforming part of this power into the anode's high voltage, making it possible to turn it into a kind of "perpetuum mobile". Thus, constant magnets made of a material called Nd-35B can be used inside this device. Professionals call them "strontium magnets". These magnets are the strongest available at the present moment: a ball made of such material with a diameter of 10 mm easily pulls ALL the paper-clips out of a newly opened box. To tell the truth, these constant magnets are extremely expensive since they consist of a number of rare-earth elements arranged in a certain spatial molecular structure. However, a magnetron-type "perpetuum mobile" created with the use of such magnets, can be the size of an attache case. In practice, the output power of magnetrons starts from a value of 1 kW. This means that even the lowest-powered "perpetuum mobile", which equal in size to an attache case is worth practical consideration. If such a feedback is used in the magnetron of a microwave oven together with a constant magnet in order to obtain high voltage in the no-operation mode, the electricity meter can be easily "cured of a rotation disease" when the microwave oven is in operation. However, no manufacturer has come up with the idea of producing a microwave oven with such a feedback and a constant magnet near the magnetron. Power-

ful modern magnetrons can produce an output of about 100 kW, this capacity being suitable for use at branches of large-scale manufacturers.

The above mentioned facts have been used to explain where an output value of a voltage transformer in a feedback path with a high anodic voltage must be used. In this case we will not get an efficiency value exceeding 100%. Today millions or even billions of people have no idea of what the electricity meter shows when a microwave oven is on. This meter indicates the energy needed to create CONDITIONS at which it is possible to extract large amounts of power from the electric-plasma generator of a magnetron. The only difference is that an electric magnet (solenoid) draws a power of 1 kW for this, while a constant magnet does not draw any power at all. The enormous amount of power extracted (as compared to the power consumed) makes it possible to heat food a microwave oven in a matter of seconds. It often takes other ovens several minutes to heat the same quantity of food at the same power consumed.

Unfortunately, all the details of the magnetron's construction and operation have been kept secret for almost 20 years. Today, we still "reap the fruits" of secrecy, when even in the calculations of many authoritative scholars we can come across values, showing an efficiency of more than 100%.

In any "perpetuum mobile" the motion of interacting bodies is strictly IRREGULAR, NON-LINEAR and PERIODIC. The most striking examples of this are devices that work using the principle implemented in the Searl Effect generator (a mechanical magnetron) – its magnetic rolls act in this very way. This also refers to electrons moving in a magnetron, from which power is extracted. In a magnetron, electrons move irregularly, non-linearly and periodically – along the cycloids. A moving electron, as electric current, creates a magnetic field around itself, analogous to the field of the Searl Effect generator produced by its rolls.

The present article considers the problem of how to correctly calculate the efficiency factor of a magnetron. This notion is basic for any device or process in any field of physics. In dynamics, we see irregularity, non-linearity, periodicity and, certainly, COMPLEXITY everywhere. Such notions as "roto-progressive", "active-reactive" and "real-imaginary" are COMPLEX principles. Using such an approach, only the module of the complex value equals 100%, this unit being a conventional one. Everything else must be less than 100% (less than a conventional unit). This leads to the possibility of developing a complex physics in the future.

COMMERCIALISING the 'SEARL EFFECT' for ENERGY and PROPULSION SYSTEMS

Review

Web site <http://www.sisrc.com>

The 'Searl Effect', discovered by J R R Searl, is a method of extracting energy. Some current expressions for the source of this energy being The Space Fabric, Quantum Space Field, and Zero Point Energy. SISRC Ltd has been formed to develop and license Searl Effect Technology (SET) on a global basis.



The COMPANY

SISRC Ltd is the company formed to administer the implementation of the Searl Effect Technology, (SET) invented by J R R Searl. SISRC Ltd is the administrative hub of the group and will continue to be based in the UK. SISRC Ltd will grant production and marketing licences for Searl Effect Technology applications to different companies in specific territories.

Currently proposed related companies include: SISRC — Germany, SISRC — Iberia, SISRC — Sweden, SISRC — Australia, SISRC New Zealand.

TECHNOLOGY

The core technology behind SISRC was originated and developed by the inventor J.R.R. Searl and is referred to as "Searl Effect Technology" or SET. The principle application of the SET is the Searl Effect Generator or SEG.

TECHNICAL DESCRIPTION

Physically the Searl Effect Generator (SEG) consists of three concentric rings each made of a composite of four different materials which are also concentrically attached to each other. The three rings are fixed to a base. Surrounding each of the rings, and free to rotate around them, are rollers - typically 10 on the first ring, 25 on the next and 35 on the outer ring. Surrounding the rollers on the outer ring are coils which are connected in various configurations to supply either AC or DC current at a variety of voltages.

Multiple magnetic poles are imprinted on the rings and rollers to form frictionless magnetic bearings. These also arrange the static charge into opposing charge clusters which cause the rollers to rotate around the circumference of the ring (as shown in Fig.2).

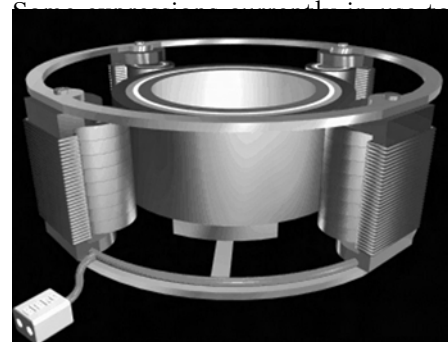


Fig. 2

Energy field of Space or Zero Point Energy. This is an unlimited and constant source of energy which can be made to flow when the correctly proportioned masses concerned are stimulated by the correct frequencies creating an 'open system'.

The idea of utilising this source of energy is currently the subject of various devices and experiments such as the 'Lamb shift', 'Casimir Effect' and the work of the Russian Nobel Prize winner Ilya Prigogine. However these devices and experiments tend to only prove the existence of the energy and not a method to create a coherent, ordered flow to produce useful power.

In contrast, John Searl has discovered that, in order to create a steady and stable flow, all the masses of the device (and the stimulating frequencies) must conform to precise values determined mathematically by the 'Law of the Squares'. A machine constructed to these principles produces a stable and useful power output.

DEFINITION OF A SURFACE OPERATING S.E.G. (J. Searl)

A Linear motor operating on a magnetic bearing with the characteristics of an auto-transformer. The S.E.G. is defined as a device, which is constructed from 2,124 component parts, which make up 3 plates and 66 roller sets. 12 of the 2,124 components create the 3 plates, which act as reaction components. 2,112 components are employed to create 66 roller sets, which act as active components. Each roller set consists of 8 segments constructed from 32 components. Each segment cannot be less than 34 grams in weight, as the law of the squares defines that value as the lowest value suitable for the reasonable generation of electricity. Therefore the smallest roller set must weigh 272 grams, making a grand total of 2,244 grams per roller set for the smallest surface bound SEG.

Tolerance \leq 0.05 gram per roller set. The larger the error the greater is the loss of power within the unit. Therefore the total tolerance for the smallest SEG roller set must not be greater than 3.30 grams - above this factor the SEG will not function.

For the best results, the tolerance across the total 66 roller sets should not exceed 0.05 grams.

The S.E.G. is a step up rotary transformer. In fact it's a 'three rotary transformers' operational system, within a unit. The inner transformer output is fed in to the input of the second plate which increases the output of the second unit, which output feeds as an input to the final unit, thereby increasing its final

output to a very high voltage. Therefore the S.E.G. is just a prime mover for the production of clean electrical energy. The output windings must be designed to step down this output to 240 volts at 15 kW.

From 1946 up to 1968 the SEARL EFFECT was always referred to as magnetic bubbles in motion. Even in my early newsletters it was explained as magnetic bubbles in motion and even today members of the teams have been heard stating the effects as magnetic bubbles.

During 1968 it became clear that these magnetic bubbles contained particles in a set manner and that there was a set pattern to how many bubbles were present in the material. Because of this finding I dropped the term magnetic bubbles, and replace it with the term magnetic quantum material and released these details in a newsletter which has since been reproduced in one of my books released a few years ago. A laboratory also agrees that somehow the material changes its state when produced in this manner.

Research is proceeding upon this issue, as development progress both here and in the USA, new findings are being created, and updates will be added to this page, as they are certified.

When the SEG rollers are brought into close proximity to the SEG Ring, the Searl Effect resonant magnetic field causes negative ions and electrons to be drawn into and accelerated through the machine. This process is assisted by the highly electron-attracting rare earth metal Neodymium. The unique mechanical and material arrangement of the SEG pulses the neodymium to continually release and replace the surplus electrons to provide electrical or mechanical power, or both.

The Searl Effect Generator (SEG) technology, as applied to the commercial market, had been previously developed to the point where a few prototype SEG generators were made, and used for electricity generation and motion. Commercial interest at that time focused on the SEG's transport potential and, under commercial pressure to deliver a fully functioning system, the original generators were used and lost in a series of vehicular propulsion experiments and demonstrations. Funding was insufficient to continue with the manufacture of the required larger-scale pressurised cabin machines - resulting in the termination of the project at that time.

Although all the operating principles, precise proportions and weights of the required materials are known for three of the four required operating materials, the precise data of the original magnetic lay-

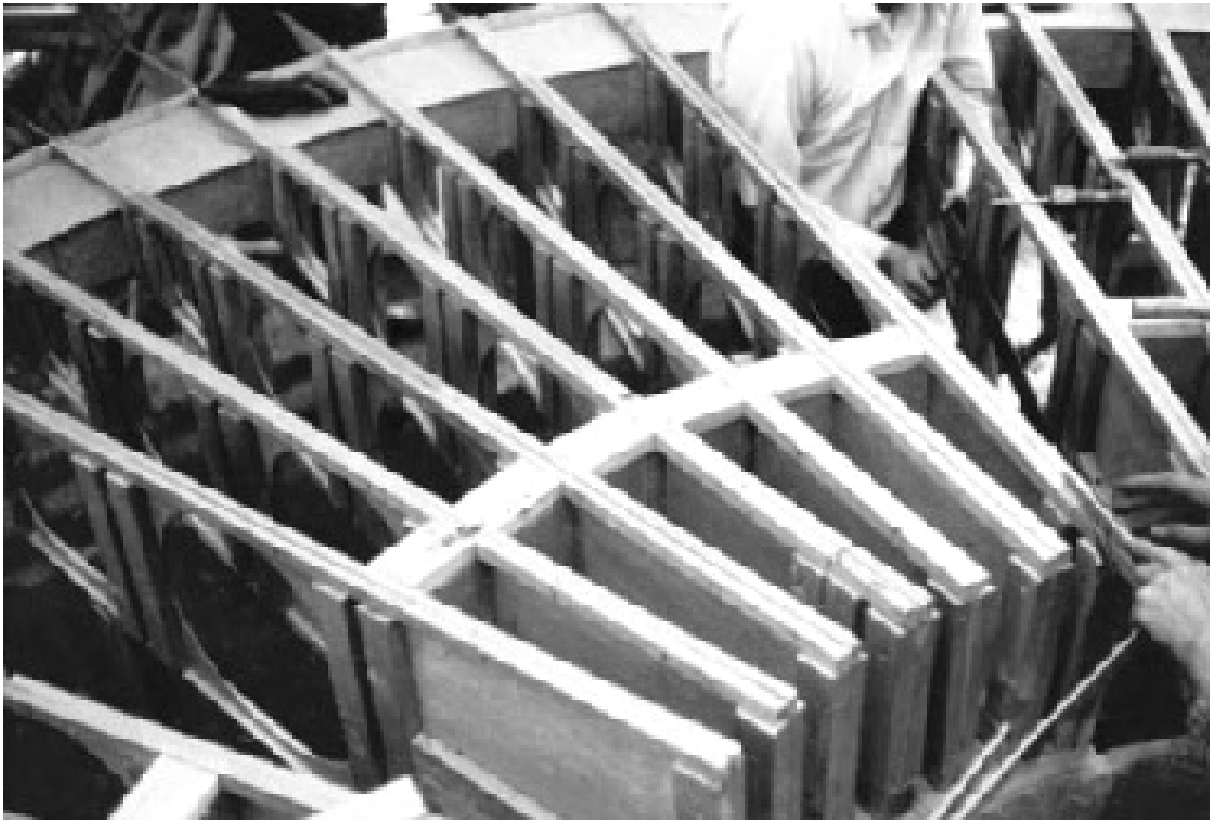


Fig. 3

Experimental craft construction. One can estimate its real size

er is uncertain. The objective of the current R&D programme is to re-establish the original magnetic layer using modern and more efficient materials.

Originally, the layered materials were constructed and magnetized by the now-defunct Midlands Electricity Board under the direction of John Searl.

Modern magnetic materials have advanced considerably, and old ones discontinued, so a series of tests need to be conducted to establish the optimum materials and processes. These tests need to comply with the working criteria required and must lead to a cost-effective manufacturing process.

PRODUCTS

The first Searl Effect Generator (SEG) product will be a compact 15 kW generator unit, measuring approximately 46 x 61 x 12 cm, which can be arranged to provide DC or AC single or three phase electricity at a variety of voltages, typically 12 to 240 V Each unit can deliver 60,000 KW hours before requiring remagnetizing - which will be on an exchange unit basis.

The proposed SEG D15AP unit shown is complete with digital wattmeter, circuit condition indicators, and triple overload protection. The units can be

mounted vertically or horizontally and connected in parallel to provide higher power. They are intended for use in any application where remote power is required for example electric vehicles, boats, building sites, farm locations etc.

In recent times SISRC has been re-establishing the original research. Due to the very limited funding that has been available, only a partially functioning demonstration prototype of the SEG principles has been possible. This prototype consists of the innermost of the three composite rings required and several rollers

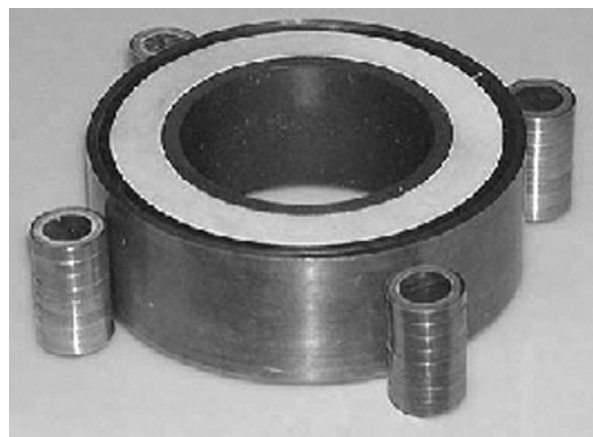


Fig. 4

Experimental ring and rollers

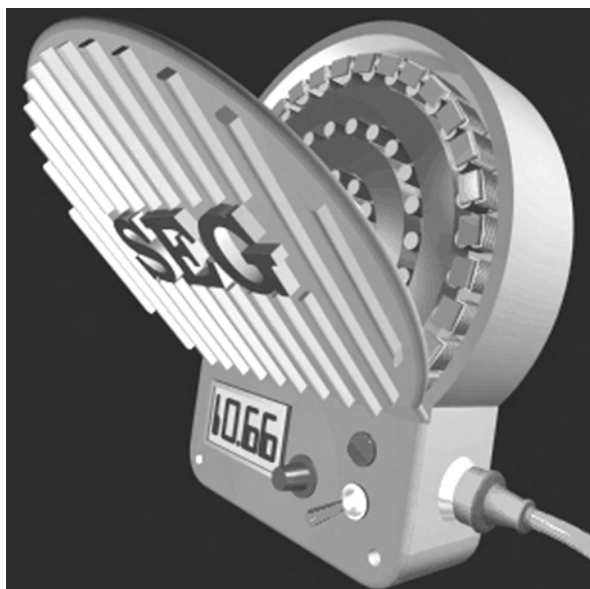


Fig. 5

We would like to hear from anyone who worked on or was involved with Searl Technology prior to 1983. Also anyone who has any old technical data, photographs or films relating to the technology. Such information could greatly assist this technology to reach the marketplace for the benefit of all and would be dealt with in the strictest of confidence.

The SEG is especially suited for use as an electrical power generator and for vehicle propulsion.

The SEG can provide electrical power or mechanical motion in various configurations. For example, it can provide power for a small domestic appliance, a unit to provide all the power required for home use, a power supply for an industrial machine or a power station rated at hundreds of Megawatts. Because a SEG is self-contained, it is ideal for use in remote locations.

Initially, for road vehicle use, the SEG will be used to drive the latest high efficiency traction motors. Because the SEG is designed to produce electricity in DC or multi-phase AC, it is suited to all types of traction motors currently available. The SEG technology can also be arranged to provide mechanical power output, in which case the vehicle transmission can be driven directly.

For terrestrial air travel the SEG can be used to create a very powerful vacuum on one of its surfaces. Other special properties of the SEG can be arranged to allow it to operate as a space propulsion system for satellite launching etc.

Because the SEG functions by strongly drawing negative ions and electrons to it, contaminants loosely

attached to air molecules are removed from the air, cooling the air in the process. This property can be utilised for air purification and conditioning.

DEVELOPMENT

Prior to the production of complete 15Kw Searl Effect Generators (SEGs), a minimum of two demonstration Ring & Roller prototypes are to be produced.

The "Ring" is typical of the innermost of the three rings required to make a complete SEG. The 69-roller sets in a complete three ring SEG are identical. Six roller sets will be made for the prototype inner rings so that the Searl Effect can be demonstrated.

The production of a self-running Ring & Roller prototype will establish the precise sequence and parameters of electrical, magnetising and material processes required for the SEG and will demonstrate electrical power generation. An operating single inner ring with 1-8 rollers will also determine if a particular material will function correctly and at what level of power output.

The five phases of the development programme that commenced in October 1999 have been completed and the rollers successfully magnetised with 'Searl Effect' magnetic fields. A sixth phase is now required to apply the technology developed in Phase five to the "Ring". This sixth Phase resulting in a demonstration Ring & Roller prototype has a duration of 6 months.

For details of the new business plan for Phase 6 investment please see the investment section for details.

INVESTMENTS

Investors are invited to participate in funding for phase 6 magnetising of the "Ring" to complete the demonstration "Ring & Roller" prototype. see details below.

All business investment involves risk. This prototype investment programme has been structured so that the rates of return reflect the level of perceived risk. With such a revolutionary technology, the perceived investment risk before demonstration of a working prototype will obviously be much higher than after.

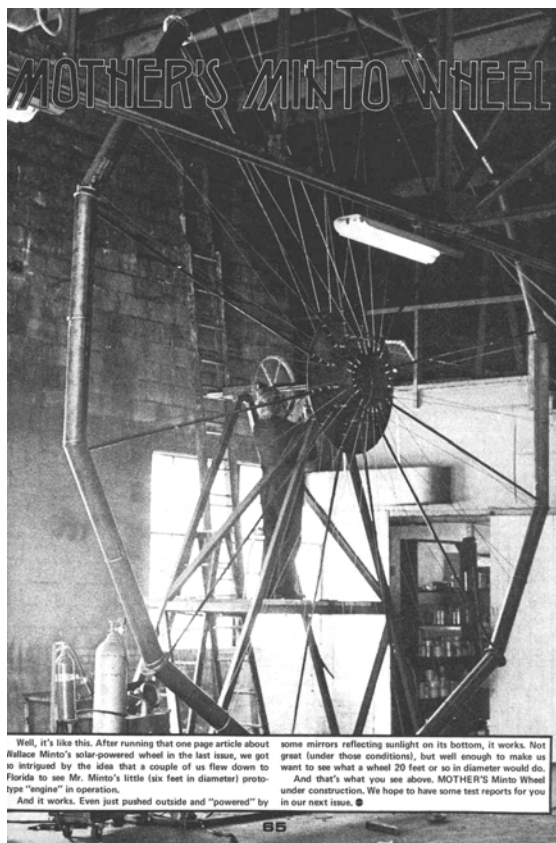
Business Plan - To receive on-line copies of the new Stage 4, Phase 6 business plan please email the address below, with some details about yourself, your interest in the project, whether your investment will be private or from a company and the amount that you are considering to invest (minimum investments J5,000, maximum required J110,000)

Please email admin@sisrc.com.

IS THIS THE “BREAKTHROUGH” SOLAR ENGINE WE’VE ALL BEEN LOOKING FOR?

The Mother Earth News, Issue 38, Page 96, March 1976

<http://my.voyager.net/~jrrandall/MintoWheel.html>



Hold on to your hat! Because if Wallace Minto has done what we think he's done . . . the backyard solar engine that can make everyone as energy self sufficient as he or she wants to be has just been invented!

And it's so simple! Minto's new engine is nothing but a big vertical wheel with a rim made of a series of sealed "drums". Sealed, that is, except for a connecting pipe that runs from each separate container to its diametrically opposed partner on the opposite side of the wheel. One of the barrels in each set is filled with propane, Freon or any other liquid that has a very low boiling point. And the whole wheel is then positioned so that its bottom edge can be heated a few de-

grees warmer than its top two thirds or three-quarters. In essence, that's it!

And here's how the Minto Wheel operates: As the Freon or propane in the drum on the bottom of the rim is warmed, it begins to vaporize and push against the surface of the remaining liquid in the container. This push forces most of the fluid up the connecting tube until it cascades into the barrel on the top of the wheel's rim. As a result, of course, the bottom drum becomes increasingly lighter as the top one becomes increasingly heavy . . . and gravity then causes the whole assembly to revolve around its horizontal axis. And – son of a gun! – when that filled drum from the top reaches the bottom and is warmed a few degrees...danged if the entire action isn't repeated all over again.

What we have here, you see, is a water-wheel that doesn't need to be pushed by a mountain stream. Just fill it once with a low-boilingpoint liquid, and forget it. As long as you can then maintain a temperature difference between the top and the bottom of the wheel (with, as explained, the bottom being kept warmer than the top), your "engine" with a little shot of grease now and then – should run dang near indefinitely.

Yes, but will that engine do useful work? Minto says it will. "Take a wheel that's 40 feet in diameter. Put 14 pairs of containers, each of which has a volume of 3.415 cubic feet, around its rim. Fill the cylinders with propane and hold the cool drum in each set at 100 F while the warmer barrel is heated to 103.5. At 1 rpm, the engine will produce 3.19 horsepower. Furthermore, if you use Freon R 12 instead of propane and increase your temperature gradient to 12 degrees, the output will go up to 8.69 hp."

Now stop and think about that for a minute. Just envision what you could do out there on the sole homestead (or even in the suburbs) if you had a steady 24 hour a day



source of eight horsepower to tap any time you wanted to. Think of the grain mills and shop equipment and composting cutter chippers and water pumps and electrical generators, you could run ... not all at once, to be sure, but one or two or three at a time.

Sure, you'll have to step that 1 rpm up through pulleys and/or a gearbox to the kinds of speeds that today's appliances and tools need for their proper operation. But that's no big deal. It's all been done before with real waterwheels. There's no new technology involved on that end of the Minto Wheel at all.

In fact, there's no real new technology involved in any part of this new engine. Just a simple rearranging of principles and materials that have been commonly available for decades. And that's the genius of the whole thing. The genius of Wallace Minto.

But can this actually be? Has Minto really come up with an unsophisticated, build it in your backyard, maintenance free, lifetime "engine that anyone can set up MW operate for scores of years on nothing but sunshine, the heat from a small wood fire, or ... or . . . or the warmth of a good sized compost pile? Can this really be? It sounds too good to be true. But Minto says that it is true and, by the time this issue reaches you, he expects to have plans available for the construction of a 13 foot wheel of his design.

(Plans, by the way, which can be scaled up to any size you might desire).

Well, we haven't yet seen the prototype Minto Wheel ourselves so we can't vouch for its operation . . . but we have no reason to doubt Mr. Minto (who, as you may recall, developed an operational Freon automobile engine a few years ago) when he states what his wheel will do. So, until we find out that it won't work, we thought you should know that those plans are available for \$10.00 a set from Son Power Systems, Inc., 1121 Lewis Avenue, Sarasota Florida 33577. Let us know how your wheel comes out!

Why did this 20 foot Minto wheel fail to turn as fast as expected? Have you ever tried to fill a very large container with a small garden hose? It takes a long time for enough liquid to flow through such a small pipe. The pipes on this Minto wheel were much too small if they wanted it to turn at one RPM. They had so much pressure that they changed to a lower pressure freon. But they restricted the flow with small pipes.

I believe if a Minto wheel is properly designed, it would function just as Wally Minto said it would.

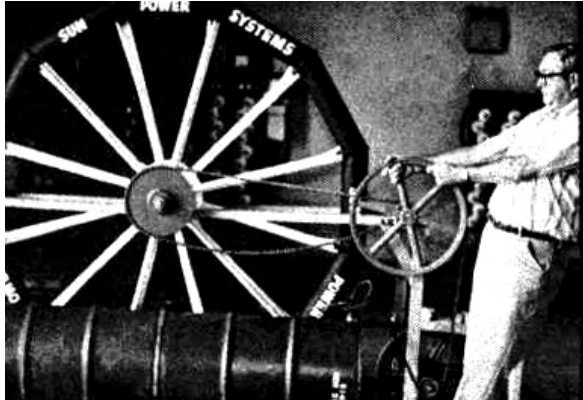
Minto Wheel

The Mother Earth News, Issue 40,

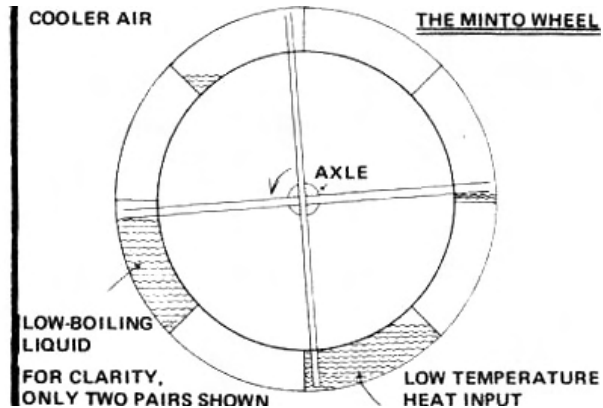
Page 102, July 1976

<http://my.voyager.net/~jrrandall/MintoWheel.html>

At the age of 11, when most young sprouts are deeply engrossed in adventure tales of one sort or another,



versal electromagnetic discoveries he had made and — as many of us well remember — he revived his low-temperature Freon engine in the late 60's, put it into an automobile, and proved that his updated variation of the old Stanley Steamer was highly efficient and virtually pollution free. Datsun, the Japanese manufacturer of cars and trucks, is currently toying with the idea of putting the Minto Freon steam engine in a line of its vehicles.



Walter Minto bought a college chemistry book for 10c in a used book store. “I thought it was more fun than any story I had ever read,” he says now.

Maybe that explains why, by the time he was 15 (in 1936), Wally and his dad were deeply engaged in research on atomic energy. “Nobody cared about uranium in those days”, he says, “and we could get it for the hauling from refineries that were interested only in the radium they could extract from pitchblende. Pretty soon we had about 50 tons of really high-grade stuff sitting in our backyard... enough to give us a corner on the market when President Roosevelt set up the Manhattan Project to develop the atomic bomb during World War II. So we sold it all to the government and I went with the Manhattan Project as the head of the radioactivity lab, special problems division.”

After the war, Minto moved on to develop a line of ultra-low-cost radioactivity detectors but, by 1949, his interest in atomic energy had given way to a fascination with geothermal energy. Low temperature geothermal energy ... and, before long, he had developed a Freon engine designed to tap this source of power.

But petroleum was dirt cheap then and nobody was interested in his ideas. So Wally soon involved himself in a study of the pollution problems that he could already see developing years before most of today's environmentalists were out of short pants.

Somewhere along the way Minto was also drawn into a still-secret project for the Navy because of some contro-



All photos from

<http://my.voyager.net/~jrrandall/MintoWheel.html>

All of which is to say that Wally Minto has long been involved in the development of what — at the time he first took up tinkering with them — have been considered “crackpot” ideas...particularly energy ideas.

We (and Popular Science and Solar Energy Digest and a number of other periodicals) were understandably interested, then, when Minto's Sun Power Systems in Sarasota, Florida recently announced Wally's latest Freon engine: a solar-powered wheel that turned as Freon was boiled and forced to expand from the bottom of the vertically mounted, liquid-filled rim to its top (see Mother No.38, page 96, for a further discussion of the operation of the Minto wheel).

Three or four months ago a couple of MOTHER people even flew down to Sarasota to see Sun Power Systems' six-foot model of the wheel run on nothing but the energy it received from the solar rays reflected on it by a mirror (see photos to the left of this text).

Well ... the wheel turned, that was for sure. But we still weren't absolutely certain that it would do any useful work. So we called Steve Baer out in Albuquerque, who told us, “We've fooled around with the concept and the wheel will turn and it'll make other things turn but it won't really do the kind of useful work that we've come to expect from our engines.”

And then we began to get letters and phone calls from all kind of people who had seen our little article in MOTHER No. 38. “God bless you for promoting this new energy source,” said some of the correspondence. “You rip-off artists! Whatta ya mean promoting that piece of junk,” said others.

So, in the interest of delving deeper into the workings of something that could arouse such widely differing opinions in our audience, we decided to build a 22-foot-tall Minto wheel of our own and test it.

Result:

At least based on our experiments, Steve Baer was right. The wheel will turn and it will do useful work (if you call lifting Dennis Burkholder off the ground as shown to the right “useful work”). It'll even break two-by-fours in two (as we found out) when you stick them through its spokes in an effort to stop the turning of the monster. And it'll run a cement mixer (which we just happened to have handy in the shop and which we hooked up with a rope “belt” to our wheel).

But the dang thing turns over so slowly. (We were shooting for a one-revolution-per-minute speed with our 22-foot wheel loaded with Freon 12 ... but the close-to-250-pounds-per-square-inch pressure we

were getting in the tanks was too scary. So we switched to Freon 11 ... which cut our operating pressures down to 48 pounds per square inch ... and the wheel's rpm to one every five minutes!)

And it was a sad disappointment to find, contrary to Minto's confident prediction that our wheel would work on a temperature difference of “three to twenty degrees”, that we had to fire our “heater” — a water tank that enveloped the circular engine's bottom edge — up to a temperature difference of 70 F ... even 100 F. And when you are heating water to as much as 180 F to make a wheel turn, you might as well heat it on up to 212 or so and run a real steam engine.

It also becomes quickly apparent to anyone fools around with one of these wheels that the blamed thing will run better if heat is applied to its rim not on the bottom, but somewhere in the range of 15 to 30 degrees up its “back” side. And that immediately rules out water and throws you — if you want to use the sun as your energy input — on the mercy of parabolic reflectors which have to be rigged to track Ole Sol across the sky and other complications that, again, make you sorta suspect that “ordinary” sun-powered steam engines are a better bet than the Minto Wheel.

And that's where we stand on the whole idea right now. Although we sincerely wish otherwise, we've just spent \$12,000 proving that the Minto wheel isn't really a practical solar-powered engine. Waste heat from other sources might be a different story ... but forget running the backwoods homestead on a sun-powered wheel.

We've stuck our necks out ... so that you can now invest your money in flat-plate collectors, Steve Baer's skylids, and all the other solar hardware that past performance has shown does work. But we don't mind. That's what we're here for. That's what MOTHER's research facilities are all about. Next idea, please.

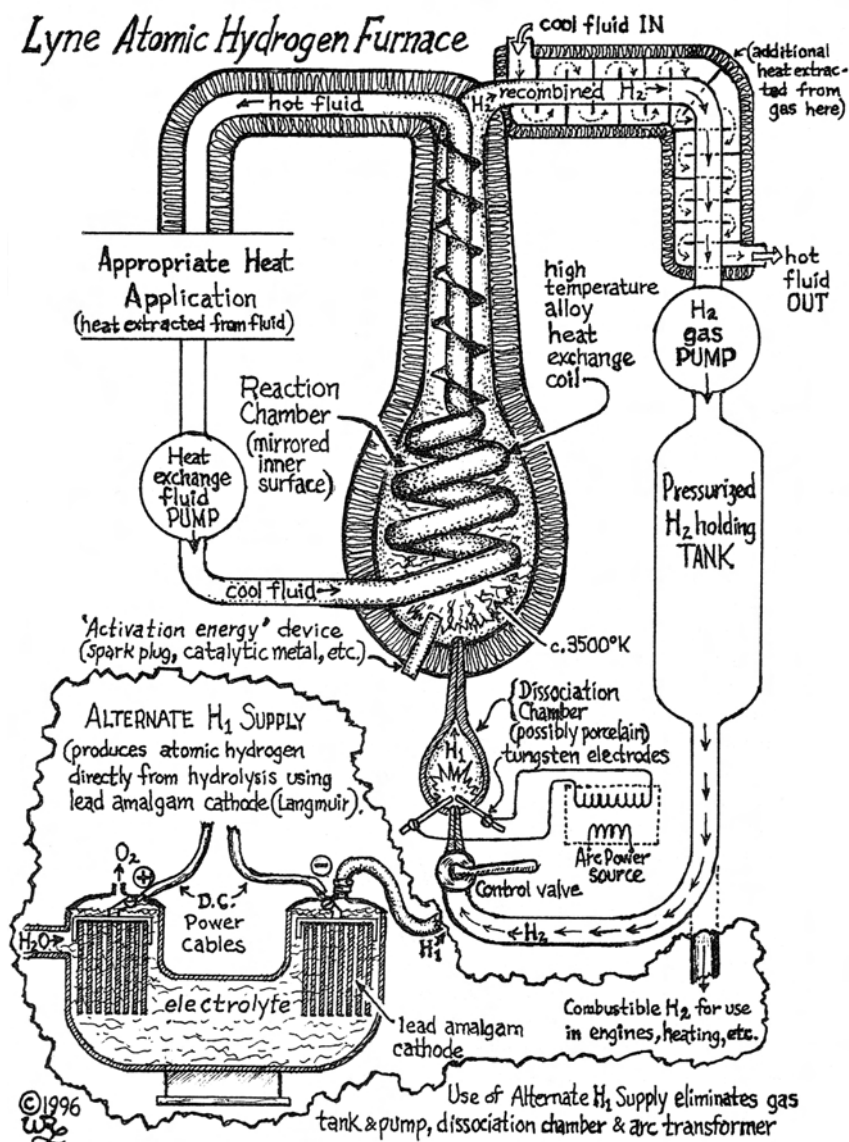
And, Wally Minto, we still love you. Because a heck of a lot of your other ideas have delivered the goods as advertised.

October 22, 2002
James R. Randall
Inventor
jrrandall@voyager.net
Stockbridge, Michigan
USA

Original ideas of William R. Lyne

In № 3 of 2001 our magazine New Energy Technologies published article by Nicholas Moller "Irving Langmuir and atomic hydrogen". In May of 2004 we have received book "Occult Ether Physics: Tesla's hidden Space propulsion system and the conspiracy to conceal it" by William R. Lyne, first published June 1997. Page 103 of this book is the picture below.

From this new information and personal discussion by phone with William Lyne we can conclude that Nicholas Moller used some schemes and pictures from the book for his article. In this case the author was obliged to make the reference to the original source of information but he did not make any. That is why our article did not contain any references to William Lyne works. We are sorry for this mistake.



We recommend to all those who are interested to know more about this book and original ideas by William Lyne to contact him directly: Creatopia Production, General Delivery, Lamy, New Mexico 87540, USA. Tel/fax (505) 466-3022.

The Magnetic Field Rotator (A Distant Energy Transfer)

Alexander SIDOROVICH

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The phenomenon of orientation of a magnetic needle about a conductor with electric current (an experiment carried out by H. Oersted in 1820) is widely known, as well as subsequent experiments by Faraday (1821) and Ampere (1821-1822) on continuous rotation of a magnet around a conductor with direct current and of a conducting magnet around its own axis when electric current passes through it. These fundamental experiments, alongside a model of Aniosh Jedlik's "electromagnetic self-runner" (1828), laid the basis for creating the first electric motors and a whole class of modern electric inductive machines of direct and alternating current (unipolar-, collector-, synchronous-type and others). However, there was a theoretical gap that was left unnoticed, namely: the basic possibility of a continuous rotation of a «magnetic needle» near the electric current. Indeed, the oscillating movements of a magnetic needle at a push strong enough or at periodic influences can be transformed into a fading circular inertial movement or into a continuous forced rotary movement. So at the swing of a pendulum or a swing in time with oscillation at a maximum deviation, the oscillating inertial movement passes the return point and is transformed into a continuous rotary movement, just as a gymnast twists on a horizontal bar under certain conditions.

In navigation, when a ship pitches on waves, a continuous low-frequency circular rotation of the magnetic needle of a storm-compass is observed. This happens due to periodic mechanical or magnetic influences (for example, because of the displacement of iron bod-

ies in the construction). The phenomenon has the character of resonant-type auto-fluctuations passing into a rotary movement, to which the works of a number of researchers [Kolong (1880), Academician A.N. Krilov (1938) and others] are dedicated. This problem is dealt with by adjusting the period of self-fluctuation of the compass card (magnetic needle) proceeding from the pitch period of the ship (lasting about a minute). It is essential that the directing force acting on the sensitive magnetic needle is low and does not admit any load, for example, even on the most gentle sliding electric contacts, which almost completely limit the freedom of rotary movement of the magnetic needle of a compass or an inclinometer.

It is also known that besides low-frequency rotation, the magnetic needle can be involved in a fast circular movement by a rotating magnetic field, for example in the stator of an asynchronous or synchronous motor. Besides this, continuous force rotation of comparatively massive magnets on a rotor in a variable magnetic field of industrial frequency, pulsing in one direction, for example, in single-phase synchronous motors with a fixed constructive placement of the magnet-rotor, is carried out. Such rotary movement of a permanent magnet around its own axis close to or at a distance from a linear electric current was not observed until now. In this respect, high-speed continuous circular rotation of a lightweight (and low-inertia) oblong magnetic needle on the whole is practically impossible in the air or in a liquid, because of the resistance of the medium (though this is not impossible in a vacuum) and, especially near a conductor with current, due to the attraction of a body with strongly expressed anisotropy of the form by an inhomogeneous magnetic field.

However, two centuries had not elapsed from the moment of Oersted's fundamental discovery, when the long-sought-after effect of the unbroken rotation of a magnet near a linear current was experimentally discovered in 2002 in various versions, for both the alternating current of industrial frequency (01.01.2002), and for direct current (31.12.2002). When the current is switched on, a free-supported permanent magnet of a rectangular form starts independently rotating, reaching a speed of some thousand revolutions per minute and continues rotating (without any noise and vibration) at a distance of up to 10 centimeters and more from the linear conductor with current, in the air. Such rotation and its other variants provide the possibility of placing and displacing a rotor-magnet or a group of rotors used as contact-free motors for changing rotary movement into translation along a conductor with current at feeding energy or as an electromechanical transformer, a take-off device or a device for storing electric energy. The priority of the effect discovered is confirmed by patent No 846 of December 30, 2002 issued in Belarus for a useful model of a "Device for Rotation of a Magnet Near a Linear Current" (by Sidorovich). Besides the unbroken rotary movement of a single magnet, a similar movement of a composite multi-speed rotor-magnet has been experimen-

tally achieved. All the experimental results have been repeated with a one-sided influence of an excitement magnetic field coming from a multi-wire circuit or a coil with a magnetic core situated at the needed distance.

The primary practical application of the effect discovered lies in the creation of a demonstrational physical model, which can be safely used in courses of physics and electrical engineering in schools and universities (due to the fact that no mercury, acid, copper sulfate or other liquids are used), in contrast to the existing models used to demonstrate the experiments of Faraday and Ampere on continuous electromagnetic rotation.

As a result, this new knowledge reveals the grounds for finding an example of similar magnetic or electric micro-rotators in nature, receiving energy for perpetuum motion from high-frequency electromagnetic wave fields, which are constantly present in the world space. In any case, a purposeful step has been made in the direction of technical progress towards deepening our physical knowledge, though, as we reported in this article, the casual and successful concurrence of a number of factors in the experiment carried out has been observed.

CD "New Energy Technologies"

All the back issues of 2001–2004 are available on a CD as PDF files.

The price is \$46.00. Airmail delivery included.

You can order the CD here:
<http://www.faraday.ru/net.htm>

Contact information for additional requests:

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New Energy Technologies magazine,
Lev Tolstoy Str. 7,
St.Petersburg, 197376, Russia.

Tel/fax 7-812-380-3844



NEWS from USA

Date: 25 May 2004

From: Hal Fox <eemf@earthlink.net>

Dear William Alek and Friends,

Forgive me if I have sent you this information before. The important concept is that there are a variety of new-energy devices that can change the way the world produces and distributes energy. We are only coupled to oil because we have been too busy to really project our energy problems into the future. The biggest problem we have is that we are polluting the atmosphere so badly that we are beginning to bring some plants and animals into extinction. Big Oil won't tell you about that problem.

There are dramatic developments being made in new-energy systems. Definition: New-energy does not include the older forms of "alternative energy" with sources from sun, wind, tide, geothermal, or biomass. Also not included are fuel cells and the use of hydrogen. Fuel cells are a hundred-year-old technology. The production of hydrogen from water is energy intensive.

Creating energy from the burning of fossil fuels creates a market that is approximately \$4.5 trillion per year. [Source of data from Encyclopaedia Britannica Book of the Year 2000, computed at 5 cents per kilowatt hour.] The result of fossil fuel combustion is global warming and the pollution of our atmosphere. These valuable fossil-fuel resources should be retained for continued long-term use as chemical feed stocks.

Our group has spent over 15 years searching the world for new-energy devices. There are now six new-energy devices that have been invented, tested, and which are in some stage of being commercialized and are considered to have strong commercial potential.

Five of the six new-energy devices are patented (or have patents pending) and all six appear to pass our requirements for having commercial potential.

1. The source of the energy must have a scientific basis.
2. The devices must be non-polluting, tap a large energy source, and be able to be economically manufactured, in other words, have a strong commercial potential.

The following is a list of viable new-energy devices that are judged to have near-term, strong, commercial potential:

1. Devices based on high-density, electron charge clusters (six patents issued). For example, see U.S. Patent 5,018,180. Note: this is the first patent, known to us, to state that the excess energy comes from tapping the zero-point vacuum energy of space. The Utah group (Emerging Energy Marketing Firm, Inc., EEMF) has the exclusive rights to all six patents that have issued in the U.S.
2. Dr. Randell Mills patented discovery of energy from water (from the hydrogen in water). See www.blacklightpower.com. The source of this energy is a new form of chemical energy from "collapsing the hydrogen atom below its normal ground state."
3. The Russian-patented process for a low-energy nuclear reactor. Re-

portedly, two kilowatts of electrical input provides forty kilowatts of thermal energy. The source of this energy is from relatively safe, low-energy, nuclear reactions. This device uses a piezo-electric crystal to vibrate a mixture of light and heavy water. The surging water is moved back and forth through small holes in a special material resulting in a development of high voltage resulting in considerable thermal energy.

4. Tom Bearden (and co-inventors) stationary electromagnetic generator (one patent issued others pending). This device apparently is also tapping the energy of space. Independent testing is currently underway.

5. This device is under a non-disclosure agreement, however, the inventor is negotiating with a U.S. company to produce and distribute this new-energy device in the United States. It is expected that this new-energy device (which also gets its energy from tapping the energy of space) is expected to be ready for marketing in 2004.

6. This device is also under a non-disclosure agreement. Basically, the device is composed of a specific type of crystal that when properly connected and packaged produces about one volt and 100 milliamperes of electrical power. The unusual nature of this device is that the power is provided without any input power and the device will last for years.

No U.S. government funds have been used in developing these new-energy devices. Furthermore, there is no need for tax-payers funds to be used.

Any one of the above new-energy discoveries can be commercialized within two years or less with an estimated \$10 million or less. To build a new fossil-fuel-powered, atmospheric-polluting, electrical generating plant will take at least three years and cost \$100 million or more.

If you have information about other new-energy devices that appear to have strong commercial potential, please share the information with me.

Best personal regards,
Hal Fox, Ed. J. New Energy

Newman Motor/Generator showed 11,400% EFFICIENCY!

News from site <http://www.josephnewman.com>

Facts:

1. A B&K Precision Differential Analog/Digital Storage Oscilloscope Model 5034 is utilized for measuring purposes.
2. The oscilloscope is the most accurate measuring device in the world for electrical measurements.

3. Input amps are so low, even the .1 amp input I give is more than fair on my part. At the same time: the BACK SPIKE of amps shown on the scope by Ohms Law (with five, 1 Ohm resistors in parallel) shows the MASSIVE 25 amp. spikes coming from the 7,500-lb Newman Motor/Generator.

4. Loads: The 10kW PTO [Grainger] Generator takes 3,730 Watts to reach a speed of 540 rpms (as verified by Grainger technicians); the belt & pulley losses from the motor of the generator is 30% or 1,000 watts; plus, the loads on the generator consist of a 26-inch TV drawing 180 Watts, a fan drawing 100 watts, and 120 Watts of light bulbs = total output wattage of 5,130 Watts.

5. Input Power: Voltage = 450 volts x .1 amp = 45 Watts Input Power.

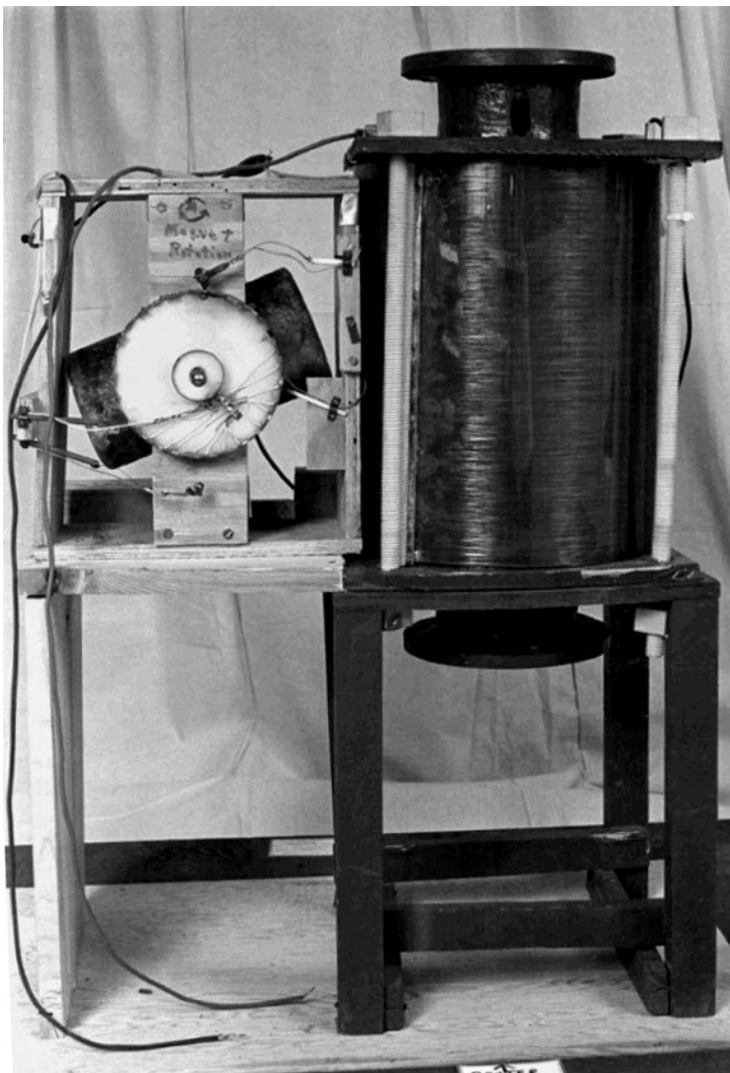
$5,130 / 45 = 11400\%$

THE ENERGY MACHINE OF JOSEPH NEWMAN

"An Invention Whose Time Has Come!"

Joseph Newman's revolutionary technology fulfills Nikola Tesla's dream when he once wrote: "The day when we shall know exactly what electricity is, will chronicle an event probably greater than any other recorded in the human race".

- Imagine a civilization with an access to virtually unlimited energy
- Imagine an energy source that is abundant, inexpensive, and environmentally-friendly



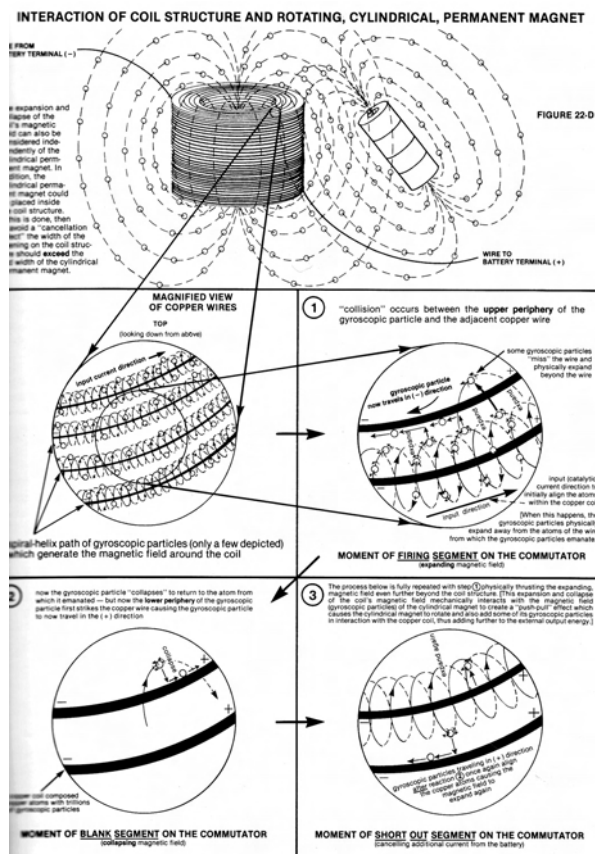


Fig. 1

- Imagine a stable and durable alternative to oil, gas, coal, and nuclear energy
- Imagine an Electromagnetic Motor which runs “cool” and harnesses the elemental forces of the universe in complete accord with the 1st Law of Thermodynamics
- Imagine such a Motor powering the world — every automobile, appliance, home, farm, factory, ship, and plane, at a FRACTION of the present cost of energy
- Imagine such a Motor enabling us to someday reach the stars — safely and inexpensively

Such a technology now exists (Fig.1):

The A & E (Arts & Entertainment) Network recently aired a national Special entitled “Conspiracies” which featured the revolutionary technology of Joseph Newman.

Better than 30 physicists, nuclear engineers, electrical engineers, and electrical technicians have signed Affidavits attesting to the validity of Joseph Newman’s revolutionary invention: an electromagnetic Motor/Generator that could supply every American’s home, farm, business, automobile, and appli-

ance with electrical power at a FRACTION of the present cost and enable you to become ENERGY INDEPENDENT.

“The future of the human race may be dramatically uplifted by the large-scale, commercial development of this invention.” — Dr. Roger Hastings, Principal Physicist, UNISYS CORPORATION.

“If the manner in which Joseph Newman conducted his experiments and the results were made known to the industrial or engineering community then, in my opinion, several companies and/or individuals possess the expertise and capabilities to construct the hardware required to fully exploit the apparent capability of his new concepts.” — Dr. Robert E. Smith, Chief, Orbital and Space Environment Branch, George C. Marshall Space Flight Center, NASA

“You have opened an area in Astrophysics which may revolutionize the magnetic energy problems which is now the most paramount problem in future energy and space travel. I do believe with proper research funds, the results would not only be a great financial boom to your financiers, but would lead to developments that will be practical and beneficial to all mankind and develop a new step in science.” — Dr. E. L. Moragne, MORAGNE RESEARCH & DEVELOPMENT CO. [Dr. Moragne was an electromagnetic pioneer in the development of the first atomic bomb.]

For additional information:
<http://www.josephnewman.com>

Editorial note: Fig.1 is a picture from a book called “The Energy Machine of Josef Newman” published in 1982.

I can assume that the scheme serves to illustrate the main idea of Newman’s theory: the motion of the electron inside the wire of a coil is not linear due to the rotation of the electrons. This motion into which these micro-gyroscopes are involved, as well as certain effects manifest themselves if high-conductive coils are used (Newman uses a long thing wire in the coil winding).

Alexander V. Frolov

General Motors "Road To Hydrogen"

Press Release from GM
May 12, 2004

Beginning today, General Motors will showcase a range of advanced technology vehicles at historic Golden Gate Park. A one-day GM "Road to Hydrogen" Tech Tour stop will feature a broad range of current and future General Motors cars and trucks that dramatically reduce emissions and improve fuel efficiency.

Students from Stanford and several University of California campuses will get exposure to technologies and business practices that they have studied in the classroom. Meanwhile, academics, state lawmakers, regulators and environmentalists will focus on ways to encourage mass-market acceptance of advanced automotive technologies.

The Tech Tour, operating from the Presidio, will serve as a platform for discussion on the future of transportation. GM will explain how its global presence and numerous partnerships enable it to develop and implement advanced technologies. GM is committed to applying the most innovative and appropriate technologies to define and meet customer and societal needs around the world.

GM will continue its role in fuel cell development, using its portion of the recently announced \$190 million federal grant from the U.S. Department of Energy (DOE) to collaborate with Shell Oil, Air Products and Chemicals Inc., and Quantum Technologies. This partnership will work to develop more hydrogen fuel cell vehicles and fueling stations, in addition to furthering hydrogen infrastructure. Research efforts will take place in several states throughout the U.S., including California.

"Without high volumes of vehicles equipped with advanced technologies, the positive environmental impact of these vehicles will not be realized," said Elizabeth Lowery, GM vice president of Environment and Energy.

Tech Tour participants will learn about GM's fuel cell activities, partnerships and other advanced propulsion technologies from GM executives and engineers involved in commercializing advanced technologies.

The Tech Tour also underscores GM's commitment to California and several California-based organizations and companies, including: California Fuel Cell Partnership, the California Environmental Dialogue, several University of California campuses and Irvine, Calif.-based Quantum Technologies. Partnerships with each of these organizations help to bring about collaboration and consensus on environmental issues, as well as facilitate the commercialization of advanced automotive technologies that reduce or eliminate emissions.

"It is important to address environmental and energy issues through frank discussion with our stakeholders," said Lowery.

"Understanding various perspectives and building strong partnerships with academic, business and government sectors will assist us in commercializing these technologies."

Fuel Cells

A recent announcement by the California governor's office, in addition to the assignment of funding is an example of the growing, global support for hydrogen fuel cell research and commercialization.

On April 20, California Gov. Arnold Schwarzenegger signed an executive order for the California Hydrogen Highways Network, which creates a public and private partnership to build a "hydrogen highway" in the state by 2010. GM is looking forward to opportunities to work with the state of California and discuss its vision of a hydrogen future and what is needed for commercial viability of hydrogen fuel cells for stationary distributed generation sources and ultimately vehicles.

"GM believes the road to a hydrogen economy will ultimately lead to truly sustainable transportation," said Lowery. "Still, we'll need to excel in several technologies - not just one or two - to meet the transportation needs of consumers and society worldwide over the next several decades."

Tech Tour participants will drive Hy-wire, the world's first driveable fuel cell vehicle with by-wire technology, along with the HydroGen3, a fuel cell vehicle based on the Opel Zafira and operated in a more traditional way.

Fuel cells aren't the only stars of the show. Technical experts will demonstrate current and near-term efficient, fuel-saving technologies such as gas-electric hybrids, cylinder deactivation — also known as Displacement on Demand, alternative fuel vehicles, clean diesels and others.

This weekend, GM will display the Hy-wire, HydroGen3 and several more GM advanced technology vehicles from the past and present at the first Wired NextFest, in the Festival Pavilion at the Fort Mason Center. The NextFest, billed as a mini-World's Fair, is open to the public and will display revolutionary technologies from various sectors, including transportation, communications and medicine.

Internal Combustion Engine Improvements

Displacement on Demand allows a vehicle to run on half its cylinders when full power is not needed. When engine loads demand full power, the system shifts seamlessly without any input from the driver and without any compromise in vehicle performance. Displacement on Demand will appear first on the 2005 model year GMC Envoy XL and Envoy XUV; and on the Chevrolet TrailBlazer EXT sport-utility vehicles. By 2008, more than 2 million GM vehicles with V-8 and V-6 engines will have this feature, which boosts engine efficiency by up to 8 percent (based on the EPA testing procedure).

Also, GM and Ford Motor Co. recently announced they would jointly develop an all-new 6-speed front-wheel-drive (FWD) automatic transmission, which is expected to offer up to 4 percent improvement in fuel economy over today's traditional 4-speed automatic transmissions. Production is sched-

uled to begin at both companies in 2006 for FWD and all-wheel-drive passenger cars and sport-utility vehicles.

"Technologies such as Displacement on Demand and the 6-speed transmission, along with our comprehensive hybrid technology plan, will allow us to apply fuel-saving advanced technologies to high-volume production vehicles," said Lowery.

Hybrids

GM is offering the broadest gas-electric hybrid propulsion program in the industry, with three different hybrid systems on three vehicle architectures, representing more than a dozen of its most popular models. Included in the Tech Tour is a GM hybrid truck. The first of 50 GM Hybrid Trucks ordered by Miami-Dade County was recently delivered at the 10th National Clean Cities Conference and Expo in Ft. Lauderdale, Fla. It will be available to retail consumers later this year as a 2005 model. The industry's first hybrid pick-up improves efficiency in stop-and-go driving by shutting off the engine at idle mode and enabling early fuel cutoff to the engine during decelerations, providing drivers with up to 13 percent fuel savings.

"Tech Tour participants will see how GM is building on its history of technology and powertrain leadership to reduce vehicle emissions and improve efficiency," said Lowery. "We are committed to using advanced technologies to address global transportation needs."

JNET

New Energy Technologies

A collection of articles Japanese Version

A collection of articles from New Energy Technologies magazine, 2001–2004 has been published in Japan

To purchase the book, please, contact

Eiichi Yamamoto

President of Yama Trans Co. Ltd

**e-mail: admin@yamatrans.co.jp or
eyama@yamatrans.co.jp**

The Waterjet Turbine (EPA 1211414)

Edward NEUROHR

Elbinger Str. 2 B

D - 76139 Karlsruhe

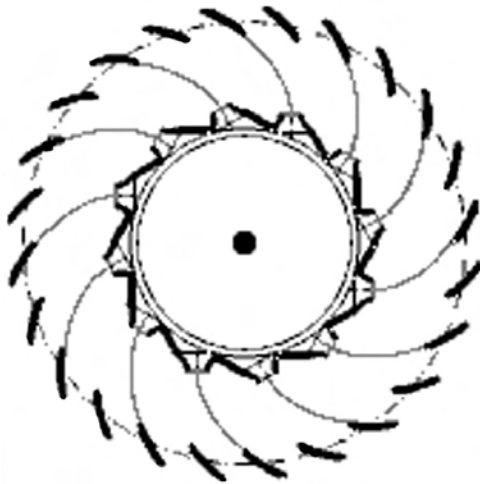
Tel. (+49) 0721 / 685052

Email: edneurohr@comundo.de

The Waterjet Turbine will be the future of the regenerative water energy, because it is the first hydraulic device that uses the reactive, as well as the active force of the same water jets to drive simultaneously two independent runners. So this open mechanical system enables a considerably higher output power in comparison with the conventional turbines.

This way it is possible to increase the rate of the waterpower in the energetic balance by the installation of the Waterjet Turbine in already existing power plants.

The efficiency of new hydroelectric plants can also be considerably increased.



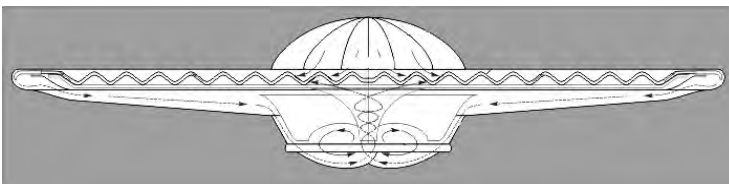
**Letter to New Energy
Technologies from Edward
Neurohr, 02 May 2004**

Dear Mr. Frolov,

On principle I agree with your intention to publish an article about the Waterjet Turbine in your magazine. The Waterjet turbine works – like the conventional hydro engines – with the usual input of water energy. But the significant difference consists in the fact that it uses the reactive, as well as the active force of the same water jets to drive simultaneously two independent runners. The interior runner works like the known reaction turbines (Francis and others) which all are mechanical closed systems that are governed by the law of energy conservation. The emerging water jets are the result of the Newtonian interaction between the drive water and the interior runner. The energy of these water jets (which leave the closed mechanical system) is used by the Waterjet Turbine to impel a second (exterior) runner. So this open mechanical system enable a theoretical output power, which is twice as high as that of conventional turbines.

Edward NEUROHR

Developing Victor Schaubberger's ideas



This turbine can be used for creating axial thrust in an aircraft's engine.

This picture is taken from web-site http://console.freeweb.hu/schau/schauberger_impotech.html

The Use Of The Effect of Homopolar Transfer of the Mass Charge in an Electric Field

V.D. DUDISHEV, Russia, Samara

ecolog@samaramail.ru

<http://www.valery12.narod.ru/index1.htm>

The experimental and analytical study of a new phenomenon — an impulse self-consistent collective charge-and-mass transfer in a homopolarly charged low-conducting apolar liquid, itself in an external impulse electric field, has just been conducted. This process of charge-and-mass transfer produced an abnormally high effectiveness.

A description of the experimental installation is given below. A device for cyclic acceleration of a unipolarly charged dielectric liquid in an external electric field (hereinafter referred to as "Dudishev's thrower") is shown in Fig.1. The thrower consists of a cylindrical V-shaped glass case (pos.1), fitted with a conical nozzle (pos.2,3); a

pulling ring electrode (pos.6), which does not have any galvanic contact with the liquid, and which is situated coaxially to the throwing chamber at a fixed yet an adjustable distance from the nozzle; and a cylindrical electrode (pos.5) with a pointed end, which is placed into the vertical part of the case. The diameters of the tubes were selected to fit into a range of from 10 to 15 mm, while the diameter of the nozzle (pos.3) was selected to fit a range of from 1.5 to 2 mm. The throwing part of the tube, the wave channel (pos.4), was mounted on a support (pos.7) inclined 15-20° with respect to the horizontal surface. The combined connections of the electrodes with the liquid medium are used to connect Dudishev's thrower to an external electric circuit.

The liquid medium is galvanic for the emitting electrode and capacitive for the pulling electrode. Zero potential is fed to the pulling electrode, while a graduated negative electrical potential of 10 to 30 kV is cyclically fed to the injecting electrode by means of external commutation. The power unit from an ME-10 SUPER-PLUS domestic ozonizer, with an output of about 10 Watts (TU 3468-002-1195853-2000), was used as a source of high voltage. The use of a high-voltage condenser with a capacity of about 200×10^{-12} F and a working voltage of 30 kV is also possible.

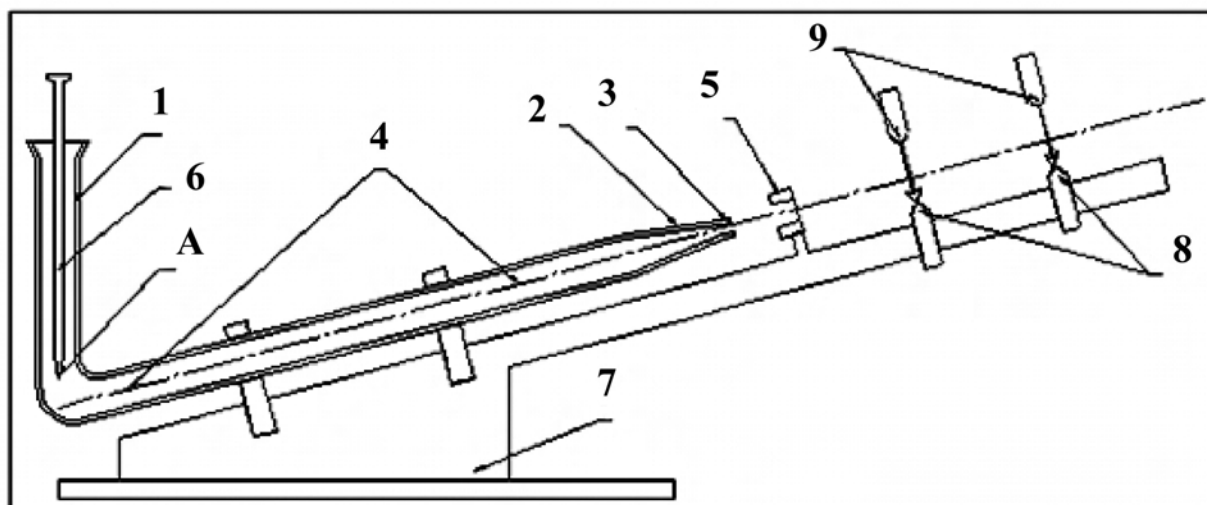


Fig. 1.
Dudishev's thrower

The Procedure of the Experiments and the Effects Observed

Before the experiment started, the acceleration tube had been filled with a portion of a dielectric liquid weighing from 0.01 to 0.1 kg. When a high-voltage impulse was fed from the conical nozzle, there was a powerful short-term ejection of a jet of water into the air, which did not touch the circular pulling electrode, as well as the optical sensors. By the moment the ejection ended the V-shaped glass tube, as a rule, was completely empty. After this, the high voltage was switched off, the tube was refilled with a liquid and the experiment was repeated once again. The speed-and-time characteristics of the jet were measured optically by registering signals coming from two photodetectors (pos.8), the optical channels of which crossed the trajectory of the jet. The mechanical (kinetic) energy of the jet, measured according to the time parameters of its motion, amounted to about 2 – 4 J; the jet velocity equaled 20-30 m/s, while the design impulse pressure at the nozzle exit section totaled about 50 kgx-cm⁻². The experiments revealed a peculiar paradox, which was a discrepancy between the mechanical energy of the jet and the electric energy consumed by the impulse. This meant an abnormally high efficiency of electrohydrodynamic energy, exceeding unity. A number of experiments have been carried out in order to study the field where this phenomenon may exist and to reveal its main mechanisms. The set of liquids tested included technical hydrocarbon liquids, water-and-fuel mixtures, and distilled water. The throwing effect was reproduced only when apolar low-conducting liquids were used. When water-and-fuel emulsions were used, the effect weakened or disappeared with a decrease of water concentration. When water was used, no throwing effect was observed. The dependence of the throwing effect on the influence of the size of the thrower and the shape of the conical nozzle was also studied. The angle of the nozzle throat, ranging from 15 to 20° and a nozzle diameter of 1.5 -2 mm, with a diameter of the cylindrical part of the thrower of 10 – 15 mm, turned out to be optimal values. The length of the throwing part of the tube before the cone edge ranged from 100 to 300 mm. The throwing effect was also not observed when a galvanic connection between the pulling electrode and the liquid was created, the polarity of the power supply having been inverted or the supply voltage having been decreased to a value of 10 kV. The effect was also absent if the pulling electrode was moved away from the nozzle to a distance of more than 50 mm.

A Description of the Physical Nature of the Phenomenon

The experiments conducted made it possible to discover for the first time the effect of a unidirectional movement of a liquid medium in such an elementary

thrower by means of the energy of the electric field. This follows from drawing in the medium at the side of the loading throat of the thrower. The physical essence of the phenomenon lies in the creation of a hydrostatic pressure difference in the narrow channel on the border between the charged and the neutral liquid. The pressure difference in the liquid medium is created as a result of a homopolar Coulomb interaction rheologically connected with the medium of the space charge of the emitter electric field. Initially, a homopolar charge formation is created around the emitter by means of injection. This formation fills the section of the channel and later acts as a rheological piston. The phenomenon reveals itself in conditions of homopolar conductivity of the medium in narrow channels of small diameter if they are fully bridged by a charged medium. In the thrower, the input area to which the water is drawn and the area where the charges are ejected to the environment are constructively combined. Thus, a unidirectional mass transfer of the medium by the electric field in the thrower takes place as a result of solving the conflict of such features as the continuity of a medium and the Coulomb repulsion forces. The valve features of the thrower are conditioned by the structure of the electrostatic field of the electrode and also by the difference in the nature of influence of the electric field on a neutral and charged medium. The direction of the injection currents determines the flow direction of the medium, matching it locally. Several functional areas of interaction between a liquid medium and the electric field of the electrode and the dielectric guiding system are formed in the thrower: the area of the medium input, the area of contact and electrochemical charge, the area of field emission, the area where the charges are braked by the medium, the area of interaction of the external electric field with the medium, and the area to which the charged liquid is expelled. The beginning of the area of an effective rheological charge interaction with the environment is the end of the braking area. It is here where a heterogeneous external electric field creates a gradient of charge concentration in the medium, as well as an electrorheological pressure difference. The area of electron emission is the area where external Coulomb forces are applied to the medium. Such application of Coulomb forces, as compared with the method of ion-convection electrohydrodynamic transformation, is an absolutely new method creating prerequisites for constructing energy-saving large-size high-wattage electrohydrodynamic devices, i.e. for developing new transport electric technologies and Coulomb hydroenergy. The experiments have shown that the problems of separating the input and output of an open hollow hydro-channel, as well as placing the stream outside the channel by means of the present valve effect, have been effectively solved.

In conditions of homopolar conductivity, unlike known electrohydrodynamic devices, the charge transfer in a liquid medium has a unique feature, which lies in the full absence of recombinational losses of the charge and vortex streams. Ion waves in such conditions have a high charge density, are exposed to a strong homopolar coherent influence on the part of the external electric field and tend to preserve shape and to be involved in a collective charge-mass transfer. A current is formed bearing resemblance to a microstream, the only difference being that it takes place on the scale of the wave channel. The main mechanism for bringing charges into the medium is the explosive cord emission.

The Excess Kinetic Energy of the Jet

An analysis of the results shows that the abnormally high kinetic energy of the jet is a consequence of work performed by the electric field as a result of a structural reorganization of the entire medium. The electric field creates energy disturbance in the structural components of the medium at the level of ions, molecules and supermolecular structures surrounding the ions.

1. Field Reforming of Hydrocarbons

The experiments revealed such products of reforming (which is a chemical decomposition of hydrocarbons) in the structure of the liquid as molecules, ions and free radicals of unsaturated hydrocarbons. The formation of charged particles during reforming is equivalent to an additional ionization of the medium achieved with much less energy consumption. Ordering of the chaotic thermal motion of the particles takes place in the electric field along the direction of the vector of the electric field strength. The exothermal reaction energy of breaking chemical ties of liquids in the electric field reveals itself not only in the form of heat (chaotic kinetics), but in the form of a directed kinetic constituent oriented along the vector of the electric field. This process is localized in the area of maximum strength of the field, i.e. at the edge of the injector where the field emission of electrons takes place. The process of electron emission starts at local intensities of the field ranging from 10^7 to 10^8 V/cm. Injection of the electrons in strong fields from the cathode points proceeds in the form of current portions of like charges – ectones, – and not in the form of a continuous flow. The whole injection current breaks down into a series of separate current impulses with a duration of 10^{-9} sec, the repetition frequency of which depends on the emission current and the voltage applied. The oscillating character of the emission current results in a resonant influence on some chemical ties of water molecules. This means that the energy needed to break the

chemical ties by means of resonance can be much less than the energy of dissociation, but, accumulating during multiple periods of oscillatory influence in the medium, this energy leads to breaking the ties, while the amount of chemical energy produced can be enormous as compared with the energy spent. That is why favorable conditions are created at the edge of the emitter in the area of the strong fields for reforming hydrocarbons, as well as conditions for resonance processes of influence of the electric field on the liquid medium, anisotropy and correlation of thermal movement.

2. A Directed Ion Solvation in an Electric Field

It is known that during injection the charges pass to a liquid medium in the form of electrons (if emission takes place), or in the form of “dry” ions during electrochemical recharge [4,5]. During charge solvation in a liquid medium, excess energy is always generated, calculated by a value of $70 - 450$ kJ/mol (100 kJ/mol is the average value), leading to its structural reorganization. An amount of energy equaling 1 eV per every solvated ion approximately equals the average molar calculation. Under conditions of a spontaneous flow of the solvation process, this energy is generated in the form of heat – a chaotic particle movement. But if this process takes place in a structurally regular and sufficiently strong electric field in conditions of deficit of neutral molecules and an uneven charge concentration, conditions are created for a coordinated ion and molecule movement, involved in solvation processes along the vector of the electric field. The electrostatic ion and field energy is spent on creating a supermolecular structure of the liquid by means of orienting the thermal motion of solvation complexes into a coordinated motion along the field vector. The mechanism of a directed ion solvation in a strong external field also benefits the mechanical energy of movement of the environment, increasing the efficiency of transformation of the electric field potential energy. The amount of the energy invested by solvation is proportional to the amount of the electric charge injected and the strength of the field. The whole multi-step process of generation and development of wave hydroelectrodynamics in a homopolarly charged low-conductivity liquid remains in full accordance with the laws of nature. And the whole sequence of the phenomena and the effects discovered in the thrower is nothing but a logical chain of consequences resulting in a complete expelling of the jet from the nozzle. This is a reciprocal hydroelectrodynamic reaction of this non-stationary impulse hydrodynamic system for the external disturbing influence observed in the experiments, i.e. the reaction for the original cause of jet formation – an external strong impulse electric field and the homopolar volume charging of the liquid. Thus, the effect of the intensive homopolar charge-

and-mass transfer of low-conductive liquids in an external electric field is a mechanism of transformation of the potential energy of an external electric field and the inner chemical energy of the environment into the kinetic energy of movement of this very environment.

Possibilities for Practical Application of the Invention

One of the evident merits and indisputable advantages of the new class of wave electrohydrodynamic devices, which soon can be developed, is their simplicity. The variety of possible designs, high effectiveness, the invariance towards sizes, the voltage applied, the average value of field strength as well as noncriticality towards the modes of a partial rupture of the liquid medium (these modes are even preferable) make these devices truly universal. Calculations have shown that in the case of impulse charging of low-conductivity liquids with ectones, the density of a homopolar negative spatial charge ranging from 1 to 100 Coulomb per 10^{-4} sec can be provided by means of an ectone explosive method [6]. During this process the Coulomb repulsive force of a homopolar spatial solvated charge (tens of Coulombs), received from the explosive electron emission of a micron-diameter emitter, can reach tens or hundreds of Newtons. As a result, an impulse hydroelectrodynamic pressure is created in the area of the cathode's point, amounting to hundreds or even thousands of Atmospheres. This strong hydrodynamic pressure is transmitted by the Coulomb forces and the electrorheological pressure wave towards the output of the working channel and amplified by a Coulomb ion accelerator in the channel of the thrower by electrostatically focusing its cone. As a result, according to the preliminary calculations and the experiments carried out, if the diameter of the output nozzle's opening ranges from 1 to 2 mm, the working pressure of the Coulomb wave of this low-conductivity liquid amounts to several hundreds of Atmospheres, the nozzle being closed.

New Electrohydroenergy

<http://www.valery12.narod.ru/index1.htm>

The method of effective liberation of the latent energy of liquids by using the hydroelectrodynamic effect can be implemented in various fields of engineering, for example, in combined pump-injectors of a new generation or in thermal energy motors [7-9]. The technology is promising for energy-saving transmission of any low-conductive liquids, for example, oil, or for direct transformation of the kinetic energy of a shaped stream into electric energy. The inven-

tion can also be used for creating a new effective method of field decomposition of any liquid hydrocarbons into fuel gases [1-3].

Electrohydraulic Pumps and Engines

The present technology of transformation of the latent energy of a potential electric field and liquids into pressure and kinetic energy by means of Coulomb electric forces makes it possible to create low-consumption pumps and hydraulic motors of a new generation. The effect of supportless Coulomb motion is very promising for use in Coulomb-type hydromotors. This can be explained by the example of a new electrohydraulic engine (Fig.2).

A simplified version of such a piston hydromotor is

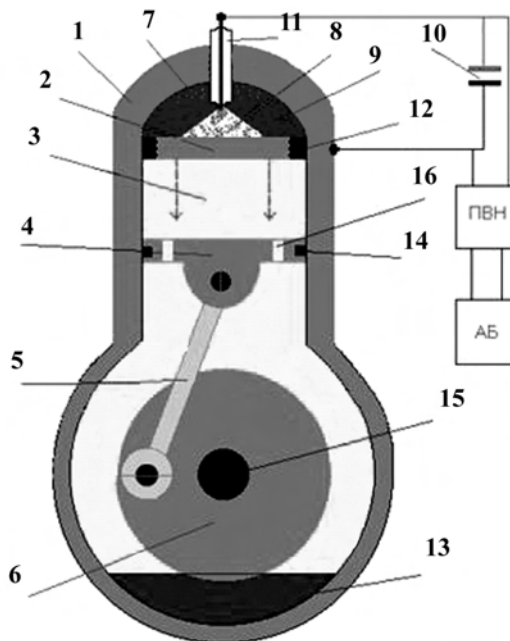


Fig.2

The Dushess-2 Electrohydraulic Engine,

1 – case of the engine, 2 – cue-type piston, 3 – air, 4 – ball-type piston, 5 – connecting rod, 6 – crankshaft, 7 – water bubbles, 8 – plasma arc, 9 – water, 10 – high-voltage power source, 11 – spark plug, 12 – rubber damper, 13 – oil, 14 – oil rings, 15 – output shaft, 16 – jet opening.

shown in Fig.2. The main elements of this energy-saving hydraulic motor are listed above. It is a simple device for obtaining the kinetic energy of rotation from the piston forward movement. It functions due to use of the potential energy of the electric field and the liquid's latent energy. This latent energy is first transformed by an open homopolar hydroelectrodynamic effect into the pressure of the liquid acting on the piston, and then into its kinetic energy.

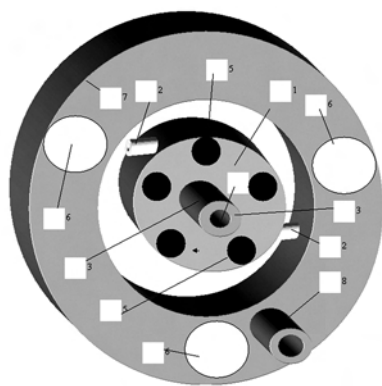


Fig. 3

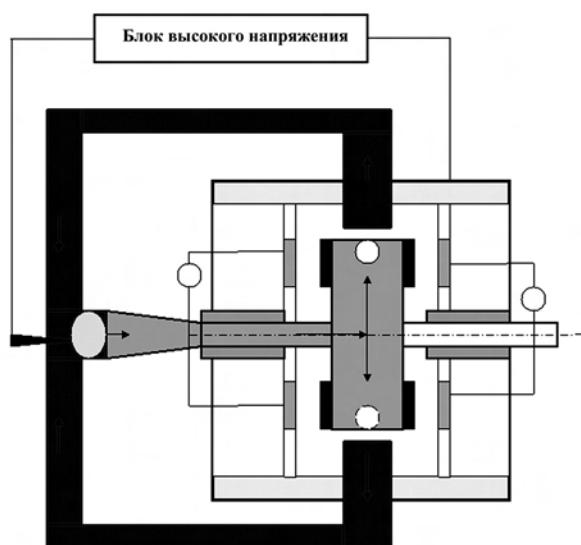


Fig. 4

Obtaining Electric Energy and Other Implementations

This unique technology can be used in any field of energy, for example, for setting in rotation a high-speed reactive turbine on the same shaft with an electric generator. The most effective solution is to constructively combine them. A simplified construction of such an energy-saving hydroelectric generator (its front version) is shown in Fig. 3 and Fig. 4

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Letters from our readers

Electron – Positron Pair Production, Positron – Electron Annihilation And Antimatter

Some questions from Gary Magratten

I was recently researching electron-positron pair production, positron-electron annihilation and antimatter. I have some questions that I was hoping that the readers of your magazine might be able to help me with.

X-ray can change into a pair of electrons, one with a positive charge called a positron and one with a negative charge, an electron. Repeated experiments have shown that to produce an electron pair, X-rays must have energies greater than 1.64 times 10^{-13} joule. X-rays with this energy produce two particles and since we assume that the two particles have equal masses, the mass of each particle is equivalent to half of the energy or 8.2 times 10^{-14} joule.

Question: If an electron and a positron collide and mutually annihilate, does this result in the release of 1.64 times 10^{-13} joule of energy?

Question: If the entire mass of the electron and positron are converted to energy, does this mean that electrons are condensed electromagnetic radiation of a specific X-ray region?

Question: What are the physical conditions necessary for positron-electron annihilation?

It is known that positrons occur in the presents of a strong, static field.

Question: If there was an apparatus consisting of a low voltage cathode, a spark gap and a high voltage anode, such that electrons accelerated across the spark gap impact the molecular structure of the steel, high voltage anode, could electron collide with positrons developed in the static, high potential field of the high voltage anode to form energy?

According to the McGraw-Hill Scientific Encyclopedia, X-rays can be produced by four means:

- 1) atoms in sparks,
- 2) electron impact on a solid,
- 3) positron-electron annihilation,
- 4) the atomic inner shell.

Positrons, also appear as decay products of heavier particles.

Question: Is it possible that during the process of 'could fusion' positrons or other antimatter particles combine with electron with electrons or other particles to annihilate and from excess energy?

The creation of a particle and it's antiparticle from the vacuum was interpreted by P.A.M. Dirac as lifting its antiparticle from a negative state. The state with all negative energy levels filled is equated to the vacuum, and the filled sea of negative energy states does not produce any physical effects. One can not produce a Dirac particle from the vacuum without also producing its antiparticle; the antiparticle is the negative energy image or hole left in the negative energy sea.

Question: Does the collision of matter and antimatter always result in the complete annihilation and the conversion of matter to energy?

Question: How does this relate to Zero-Point Energy Theory?

Question: If the electron-positron annihilation was fairly easy to reproduce with simple, inexpensive apparatus, could it be a practical method of energy production?

Any answers to these any or all of the questions would greatly be appreciated.

Respectfully,

Mr. Gary Magratten

Email: garymagratten@yahoo.com

Is a Revolution in the Fundamental Sciences Possible?

V.F. ANDRUS, Ukraine

www.elit-cons.com

A new revolution is not just possible, but has already taken place! Three new fundamental fields of knowledge have appeared recently, which are neutron physics, neutron chemistry and neutron astrophysics.

These three new sciences have been developed based on the assumption that everything in the Universe, starting with particles and ending with galaxies is indivisible. In other words, the Universe is considered to be a uniform organism, in which the activity of every particle is energetically ensured by the stars making up galaxies. The main principles of the new sciences have been popularly stated in the books "Thoughts Aloud" and "People". You can read these books at website www.elit-cons.com. A manual, "The Fundamentals of Neutron Physics", is due to be published soon.

Albert Einstein tried to create a unified field theory, which would have united electric, magnetic and gravity fields. Though the effort was not successful, the idea remained. Einstein succeeded in reaching this goal on a more global basis by creating a unified field theory.

The appearance of the three new sciences makes it possible to make a following statement: "For the last 50 years, modern science has been gradually evolving into a new sort of Inquisition due to wars (including the Cold War) and other objective reasons. It has created a series of dogmas fully obstructing further development of the fundamental sciences".

The first dogma: quantum electrodynamics

As an author of the unified field theory, I dare to assert that not only do electrons and photons not exist in nature, but a nucleus surrounded by electrons is also a false notion. Six billion people are constantly deceived when they believe that they are studying the structure of the world, while in fact they are studying the history of human arrogance.

The second dogma: Dmitry I. Mendeleev's periodic table

Gold, silver and platinum are nothing but alloys with deuterium, and not elements. From technetium on, we are also dealing with molecules or alloys. Any metal can be transformed into a precious one by saturating its crystal lattice with deuterium.

The last news from this field of knowledge is that titanium has been transformed into gold. At the Kurchatov Institute of Atomic Energy, Urutskoev, Doctor of Physical and Mathematical sciences, has obtained positive results on transmutation of elements using strong electric charges.

And, finally, the third dogma: «a perpetuum mobile is impossible».

Though such nonsense does not bother even me, but the idea that energy cannot come from nowhere, from a scientific point of view is a striking example of the fact that world science has absolutely no idea of what energy really is. The scientific establishment also believes that it has the right to thrust its opinion on every person living in the world, starting with early childhood.

Let us have the pleasure of opening the eyes of the science establishment. This amounts to breaking the chains that have been holding us for three hundred years.

There is only one type of energy in the Universe, which is the energy of stars in the form of light and its derivatives.

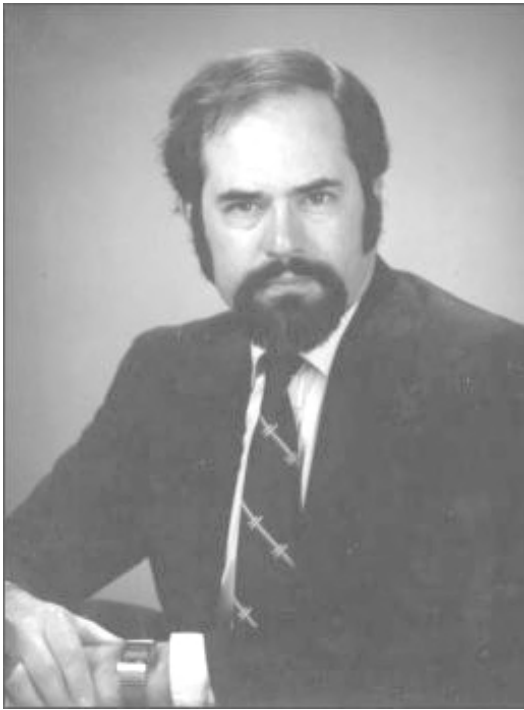
Any physical or chemical transformations will not change the state of affairs and the stars will always be the only source of energy.

Let us turn to the famous clock, which has been running at a Paris museum using a barometrical pressure difference for 200 years.

Science believes that it is not a perpetuum mobile. But if this mechanism has been using the stars' energy, revealing itself through natural physical and chemical processes for a long period of time, it really is a perpetuum mobile the way a star is.

In order to create a UFO-type means of transport, we will need to have a stationary eternal source of electric energy, which, in fact, has already been created and tested by me. Helium is not needed. Superconductivity is easily achieved in metals at temperatures below +10,000 C. Official science is not aware of the existence of the present effect, though scientists deal with it every day.

We have to find ways to make possible many projects aimed at radically changing the life of humankind, directing our efforts at developing their intellectual potential.



In Memory of Eugene Mallove, Editor-in-Chief of “Infinite Energy” Magazine

Science Writer Mallove Slain at Family Home in Norwich

By **Greg SMITH**
Norwich Bulletin
Sunday, May 16, 2004

A 56-year-old Dr. Eugene Mallove was killed during a suspected robbery and brutal assault at his family home on Salem Turnpike Friday. Dr. Eugene F. Mallove, published author and father of two, died of multiple injuries to his head and neck. The death was ruled a homicide. Police said initial investigation indicated a robbery, during which a physical confrontation took place.

Dr. Eugene F. Mallove was found dead Friday night at his family home at 119 Salem Turnpike, Norwich. **In New Hampshire, Mallove was the president of the nonprofit New Energy Foundation and since 1995 the editor-in-chief of the organization’s magazine Infinite Energy.** The bimonthly magazine covers topics of new technological innovations in energy and science and follows developments in the field, according to its Web site. Infinite Energy managing editor Christy Frazier worked with Mallove for the past six years and had become very close. She called Mallove the “most caring and giving person I probably have ever known — a very successful, brilliant man.

“It’s been a wonderful, wonderful experience. It’s

hard not to love the things he loves because he’s so passionate,” she said. “He touched the lives of everybody he came in contact with.” Mallove’s parents, Mitchel and Gladys Mallove, had followed their son’s move to New Hampshire in 1988. His father was the son of Russian immigrants.

Dr. Mallove held a master of science degree and bachelor of science degree in aeronautical and astronautical engineering from the Massachusetts Institute of Technology and received a science doctorate in environmental health sciences from Harvard University in 1975. He also taught science journalism at MIT and Boston University and previously was chief science writer at the MIT news office.

He is the author of numerous technical articles and of several books, including the Pulitzer-nominated book on cold fusion titled, “Fire and Ice: Searching for the Truth Behind the Cold Fusion Furor.”

Dr. Eugene Mallove is dead

Steven B. KRIVIT
New Energy Times
www.newenergytimes.com

It is with great sadness that we report the passing of Gene Mallove, who was killed on May 14, 2004 apparently due to some sort of involvement with a prop-

erty dispute. It is considered by the police to be a homicide and an investigation is underway. Gene is survived by his wife Joanne, son Ethan and daughter Kim. No funeral arrangements are known at this time.

Gene Mallove, who, in his 1991 book "Fire from Ice: Searching for the Truth behind the Cold Fusion Furor," was the first to courageously and boldly express the truth behind cold fusion, long before any science journalist even dared to ask questions that challenged the prevailing view. For 15 years, Gene maintained the cold fusion "torch" at great personal sacrifice, which initially drew many to learn the truth behind cold fusion.

In Memory of Dr. Eugene Mallove

Gary VOSS

CEO/Dir.

T.A.P.-T.E.N. Research Foundation International
San Diego, CA.

I want to make an observation of a moment to remember our good friend Dr. Eugene Mallove, since his passing as a result of a recent brutal murder.

It is still inconclusive, yet not to be dismissed as highly probable the suspect of foul play to have had a hand of involvement to intentionally silence this exemplary leader of the pack who would risk everything to prove to the world that free energy is abundant and available all over and relatively cheap and inexpensive to reproduce right in your own kitchen, which I might point out that the DOD considered a threat thus the motive for hiring disinformationalist contracted out to put a spin on this by intentionally corrupting the data from cold fusion replication experiments.

Moreover, is the motive for hiring a hit on his life is which is without question in consideration of his plans to confront this issue on a very highly influential platform that would finally provide the smoking gun to put the disinformation campaign to bed once and for all.

It's just a real tragedy that the gunsmoke trail had to end in his sudden death, yet we should rival from this and do what he would have asked us all, and that is that the show must go on!

We will not back down, and if we rally collectively to act swiftly, we could turn this around to benefit the very target of trying to stop us from doing so.

MORE ON THE MURDER OF GENE MALLOVE

By **Jon RAPPOPORT**

From: <http://www.nomorefakenews.com/archives/archiveview.php?key=1980>
2004-05-16

I have just finished consulting several sources about this terrible tragedy. Among the sources was Steven Krivit of New Energy Times who, like Gene, is an investigative journalist in the area of cold fusion and other energies.

Here is what I have gleaned so far. No one knows, at the moment, any specific details which would contradict the sketch offered by police about Gene's murder. (The AP dispatch on this is printed below in an earlier piece.) Several recent developments, however, in the cold fusion arena make it impossible to ignore a scenario in which Gene was killed for political reasons.

As of about January, the DOD expressed a renewed interest in cold fusion. This interest could be (COULD be) related to the fact that one of the byproducts of the process is tritium, an element utilized in bomb production. To forward the making of large amounts of tritium would, of course, require major money and an expanded effort.

Large quantities of excess heat (energy) have been produced in many cold fusion experiments. DOD obviously runs on energy.

There has been talk lately of trying to create a weapon by directly employing the cold fusion process.

As to the idea that transformations from one element to another have been witnessed in cold fusion experiments (the alchemist's dream), this is true. However, the amounts of these transformed elements are, so far, very small and are not predictable, and the thought that one might reliably be able to turn various forms of uranium into the deadly U-235 for nuclear-bomb making appears to be far out on the horizon.

If the DOD is, in fact, showing a renewed interest in cold fusion, this could constitute a threat to the oil monopoly.

Gene was the most coherent and powerful voice on the planet for getting out the truth about cold fusion.

I have an unconfirmed report that Gene and Richard Hoagland were, in the next few weeks, going to present to members of Congress further evidence on the credibility of cold fusion.

I have been told that Gene, in cooperation with another cold fusion researcher (whose name I'll keep out of this story) had just made a breakthrough in the technology.

I have a report that a major article is due out soon in a national technical magazine that will present a much more favorable view of cold fusion than we have been treated to in the last decade. Gene was interviewed and consulted extensively for this article. It's also possible that this article will resurrect an issue (kept alive by Gene since 1990): a charge that MIT, Gene's former boss, employed fraudulent means to discredit cold fusion, while accepting large sums from the government to research hot fusion, a technology that has brought home pathetically few results.

If the killing of Gene Mallove was politically motivated, it would function as a warning to those scientists and others in the cold fusion field that they should scale back, shut up, and eat oil like everybody else.

Despite science-establishment and media efforts to reject cold fusion as a doorway into titanic amounts of energy, produced cheaply, for the whole planet, the research continues around the world. Over a hun-

dred labs have obtained positive results (excess heat energy produced). Silencing such results has been a major op. Eugene Mallove was the cardinal voice in breaking the wall of silence. He will be greatly missed. But his work will not have gone in vain.

Editorial note

I knew Eugene Mallove from late 90s by correspondence, when he published a few articles of mine in "Infinite Energy" magazine. Thanks to his magazine I have always been well informed about the latest developments in the field of cold nuclear fusion, as well as about the latest technologies of alternative energy. An idea to start publishing "New Energy Technologies" magazine in Russia visited me after understanding of the important social and scientific role "Infinite Energy" magazine played in the USA. Concerning Eugene Mallove's tragic decease we can say, independently of the official version, that nothing happens for no particular reason with those who try to change the world. Eugene managed to do a lot for our world to become better, that is, more corresponding to God's plan.

Alexander V. Frolov

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***"There is almost
no area of
human activity
that would not
be dramatically
affected by the
advent of new
energy
technology—
especially
matters of war
or peace and
health and the environment."***



— Dr. Eugene F. Mallove

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Esoterica as a Catalyst for a New Era in Physics and Scientific Inquiry

Donald REED

Torsionpower@yahoo.com

Note: the article is published with abridgements

Introduction

Those who have remained abreast of continuing developments over the years in the field of new energy technologies, have almost unanimously come to the realization that the operational principles of devices documented to exhibit over-unity power and the like, rely on yet uncovered properties of the physical vacuum and its energetic origin.

Many groups have attempted to develop understanding to apprehend the principles of operation of the physical vacuum, as the real source of matter, energy and consciousness. However, they have fallen short in achieving this coveted goal for many reasons. First, a relative ignorance and/or selective omission of the important findings from the above mentioned and related non-conventional scientific research due to the adherence of the maxim that automatically discounts any data not upholding current accepted paradigms. Secondly, since our waking consciousness is circumscribed by this camouflage physical existence, the methods used to ascertain nature's workings are correspondingly limited to physical yardsticks and dichotomous thought processes. Consequently, although these efforts have been admirable, mysteries still remain which cannot be accounted for by received knowledge. This is perhaps an indication that these investigations have not gone far enough in scope. For instance, perhaps due to their selective omission of non-orthodox results, many research groups have not acknowledged or even considered the possibility that some of these vacuum principles may actually transcend the Aristotelean dual-valued (discursive) reasoning processes that are

normally brought to bear to apprehend the wheelwork of nature. In this researcher's opinion, information garnered from a broader scope of knowledge sources, some of which advocate vacuum models abstracted from the mathematical tools of both multi-valued logic and non-orientable topologies, might actually be necessary for a more fuller understanding of vacuum structure.

Such non-intuitive notions recently propounded by quantum physicists as non-locality [1], or entangled states [2], or non-differentiable (but continuous) holographic fractal-microphysics [3,4,5] recently developed as a model for quantum processes, or new relativistic-inspired concepts that involve closed-timelike curves [6], or superluminal wave transmission [7], or dual nature of the vacuum as a consequence of the multi-dimensional framework of superstring theory [8], may be reflective of a necessity to seriously consider such vacuum models.

The seeds for this proposed revolution in worldview will be sown by examining the connection between certain psychically gleaned data from the entity Kryon [10] (transcripts in italics, and my comments in parentheses with key ideas emboldened), and specific anomalous phenomena recorded over the years not currently explained by standard physics paradigms. This information will not only be taken from current visionary discoveries from the often seemingly paradoxical findings in quantum physics, but also from several less well-known but nonetheless key experimental protocols yielding documented research results that have flown in the face of received knowledge: John Hutchison's electromagnetic research [11], Rudolf Zinnser's

so-called “kinetobaric effect” [12], Nikolai Kozyrev’s theoretical and empirical findings [13], supported by new work [14], as well as that of other pertinent Russian research [15]. Specifically, we will attempt to show, through a wide-ranging examination of various Kryon transcripts, backed up by findings from new energy research, new theoretical models in fundamental physics, etc., of the necessity for the establishment of a fluid elastic fractal-field nature for this primordial essence which is malleable; one in which even the macroscopic local pace of time, mass, energy content, and spatial characteristics of a stationary object (its reality index), can be influenced artificially by intelligent technological control, or naturally by conscious intent, or by a combination of these methods.

Primordial Structure of Matter-Fields and Road to “Free Energy”

The coveted goal of what has been loosely termed “free energy” is basically equivalent to what many researchers have referred to as engineering the physical vacuum medium directly to produce useful energy to do work. Kryon/Metatron (henceforth referred to as KM) speaks instructively on this matter: Humanity has been convinced for some time that there might be something called free energy. This might be manifested in a device that would be able to sustain itself seemingly without fuel. The question is, is it possible? The answer is yes, it always has been. Some will understand how this could work, for it profoundly involves magnetics. And indeed there will be some who will discover it at a macro level, but it won’t be very efficient. (In this regard we make reference to the continuing frustrating feature of over-unity power and the like not to yield to testable replication in many cases. Could this be due to misplaced focus on the macroscopic arena for the design and purported conjectures about the operational principles of the apparatus?). KM continues: What we wish to do is give you some answers that may surprise you, but which will allow you to achieve the goal of free energy far easier and quicker. Then KM quickly reviews the phenomenon of magnetism present in common static magnets. He continues: There is something going on with magnetism that will indeed be discovered. It has a layer of interdimensionality that you are now just broaching: it is not definable in four dimensions (your reality). The true reason why (the magnet) pushes back is not even part of your four dimensional physics. You named it, but you don’t understand it.

Some scientists when on to postulate: “What if we could get magnets to push against magnets? If we design something clever, perhaps the magnets could push against themselves and we could use this energy in a circle – in a machine – magnets with mag-

nets. We could use this incredible natural pushing and pulling force to push and pull against itself. Then we could have an engine that fueled itself with nature’s force!” This then, is the simplified way science first started to think about free energy. Today, if you talk to a physicist, you will discover that it isn’t possible. The scientist will tell you that there’s always what would be called the “trade off” or “paying the piper” (Second Law of Thermodynamics). You can’t get something for nothing. There is always something that’s going to interfere with free energy, they say. Are they right? YES! But let me tell you what that “something” is: 4D(dimensional) physics. The restriction you find yourself in...the reason it doesn’t work...is due to your own dimensional reality. That’s the answer. Now you know the puzzle, and hopefully we’ve explained it in a way that you’ve understood it. Now we must tell you about true physics. With all this in mind, will this engine ever work? The answer: YES. This magnetic engine works very well! But not the way you think it might.

In order to broach the next issue, we have to tell you this: the physics that you are so fond of, and that you boast about, has consistency – that is, when you find a postulate that proves itself 100 percent of the time in your real 4D world. When this happens, you have the propensity to feel good about it. Then you project whatever that rule is and apply it to the entire universe. Therefore Newtonian, Einsteinian, and Euclidean physics – the rules that seem to govern everything at all levels – are absolute to you. As you discover them in your reality, you set them in cement for all realities. Well, that’s not the case! Let me ask you this, scientist: Did you try this physics in all the forms it could exist? Or did you make some assumptions?

In the past we gave you hints. Kryon gave you formulae that indicated that there were missing pieces in the basic physics concepts that you still did not understand (See text and also references in [9]). You see, physics is variable...and to some this is not good news. What is the largest variable of physics? Size. The ratio of attributes between mass, magnetics and gravity changes with size.

We’re going to define this variable and call it the “quantum membrane”. It’s a membrane of attributes. It’s one that you pass through at a certain level, where physics changes. Now, these things have been seen, but up to this point those who have observed them have seen them as quaint. Some have argued about this and asked, could this membrane of attributes exist? Yes, it does. When you pass through this level, many odd, unusual things take place – things that actually might clear the way to free energy. Let me be more specific. It’s actually a membrane of dimensionality: what you might call moving from four to

five. Of course this is wrong to say, because when you move out of your dimension, there is no more linearity, since your time changed. ("time-frame", see [9]). So "five" really becomes an impossibility, so just say you are moving out of your dimension.

Listen. I'm going to give you information that your scientist will validate shortly. Let me ask you this. According to your physics, can two things exist in the same place at the same time? And you might say, positively no. Then let me change the question. What if the two things were really the same thing twice? It is actually what happens when matter passes through the quantum membrane. The same particle exists in two-dimensional attributes simultaneously. When matter passes through the membrane, there is an instant, infinitesimal portion of time where the matter actually contains both polarities, positive and negative (energies, in the Dirac conception). It actually seems as if the parts are in the same place at the same time. This is almost what you might call an anti-matter exchange. (in another Kryon discourse [9], this process is termed atomic phasic displacement (APD). Where is anti-matter which is so elusive to your physics experiments? It's resting on the "attribute quantum membrane". It's also in a slightly different time-frame. When you start to understand the ability within physics to change time-frame reality, all of the anti-matter will present itself. And the reason is this: It has to be there for balance! Consequently, when matter passes through the membrane, there is a momentary, infinitesimal, unbalancing of what we have called The Cosmic Lattice (origin of the physical vacuum), see [9]). And in that moment, there is energy created, seemingly from nothing. But it's not from nothing, but from everything! The Cosmic Lattice represents all the energy in the universe in a balanced, zero "null" state, waiting to be tapped. We have described this before. What is the secret of tapping it?

The secret of free energy lies in becoming very small...in very small magnetics going through the membrane – that is, an interdimensional force is at work. It is the quantum leap – the thing that seems to bridge the unbridgeable, where particles can go from one place to another and yet seem never to have traversed the path between them. What if the particles never "traveled" at all? What if they bounced to another dimension, since they were forced to due to a situation where they occupied the same space at the same time?

The secret of free energy is very, very small machines... lots of them working together. If you can make the machines small enough and you can align them to a common purpose (common push), you could take advantage of what I have just given you.

When you deal with magnetics at a molecular level, you're going to discover that it acts differently (in a forthcoming paper I am going to argue that what I believe KM is speaking about in this instance is the possible existence of magnetic charge-current density creating low energy magnetic monopoles at the microscopic levels, to symmetrize Maxwell's equations. When symmetry is broken at the macroscopic levels, we have the customary divergenceless magnetic field and detect only electric charge and electric current). Free energy is available today through large arrays of very small engines (nanotechnologists should take note of this pronouncement). It's not free, either. It's not the creation of energy out of nothing. Instead, it is tapping the Lattice where mountains of energy is available.

Here is something else you will discover, and something very fun for the mathematician (theoretical physicists). The large array of molecular engines will total a force that is beyond the sum of its parts! This alone should be the clue that there is unseen "hidden" energy at work. The final new hint in this scenario of free energy advice that we will give you is this: Since it's going to take very small magnetics to do this, you may need some very small polarities to move around to accomplish this. How? Don't forget that you can magnetize certain gases (KM is possibly speaking about a new way to operate on a plasma).

Now, let's dissect the elements of this treatise to see how it matches up with recent research and findings in quantum physics. KM speaks of a paradox (from the standpoint of our dimensional framework) that must occur with microscopic matter before vacuum energy can be produced directly – that is, a physical entity's positive-negative energy attribute-complex must be operated on electromagnetically to occupy the same place at the same time. Such dynamics inherent in the physical vacuum/Cosmic Lattice could probably only be abstracted in terms of a mathematical formalism whose edifice was constructed on multi-valued logic or non-orientable topologies. We shall explore this in greater detail later. Such is becoming the case in quantum physics as new paradoxes continue to present themselves to challenge the current paradigm of causality founded upon Aristotelean logic, with the inescapable reality that elementary particles can somehow affect each other no matter how far distant.

Conclusion and Prospects

In the above paper, we have revealed the existence of an energetic vacuum structure, whose primordial essence is possibly non-dichotomous and non-scalable. Such a way of thinking (multi-dimensionality and multi-polarity) creates new knowledge.

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