

New Energy Technologies

Magazine

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

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Brief review of energy machines-engines

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The engine was called a machine as early as in I century B.C. Today an enormous quantity of engines-machines exists, so it is necessary to classify them according to type of consumed energy or fuel. The following machines are known:

1. hydraulic motors
2. internal-combustion engines
3. external-combustion engines
4. air motors
5. jet engines
6. gas turbine engines
7. nuclear jet engines
8. nuclear engines
9. ionic engines
10. electric and magnetic engines
11. steamers
12. quantum engines
13. vibratory engines
14. molecular vortex engines

There is no need to overview the entire history of the mentioned types and classes' development. Thus, we will consider 1-2 engines from each class. Taking into account the present-day reality, only efficient engines are interesting.

1.1 Hydraulic motors

Hydraulic motors are widely spread in industry. Russia created its first hydro turbine by means of an inventor called I.E. Safonov in 1837 [1]. Contemporary turbines are made using vertical or horizontal shafts. Powers of large turbines reach million kW though their efficiency is only 28-35%; in some cases, it reaches up to 40-45%.

The only hydroelectric power station having efficiency as high as 50% is Hydro Power Plant (HPP) -1.5 (its power is 1.5 kW) built in the USSR in the eighties [1].

In 1995, first hydraulic machines with efficiency coefficient more than 100% appeared.

The advantages of such an electric station are its high efficiency and ecological cleanness. The drawbacks are its height of up to 25 meters and its mass of ten tons while its power is 4 kW for electric energy and 3 kW for heat energy. This heat power station uses vortex heatgenerator [3].

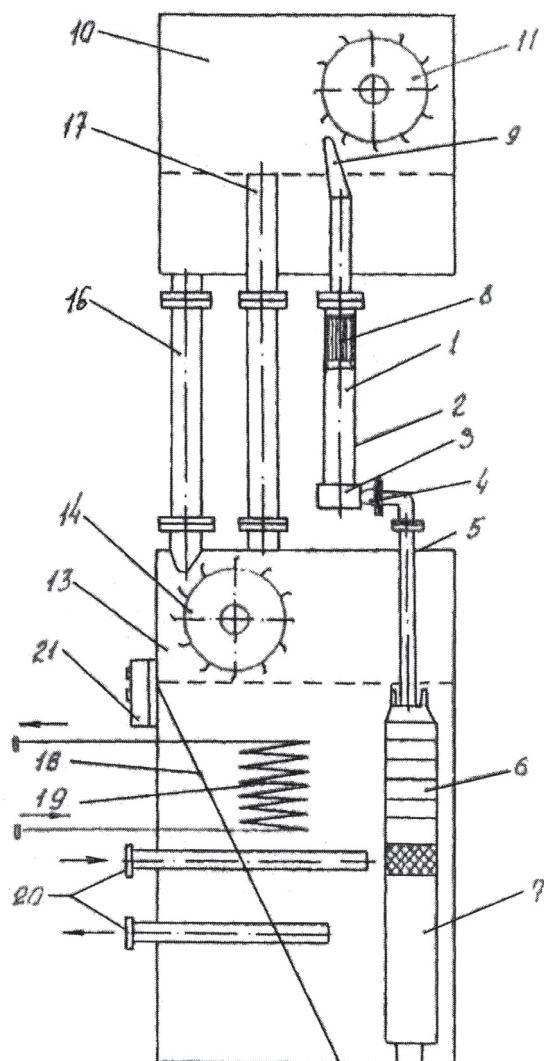


Fig. 1. A hydroelectric power station

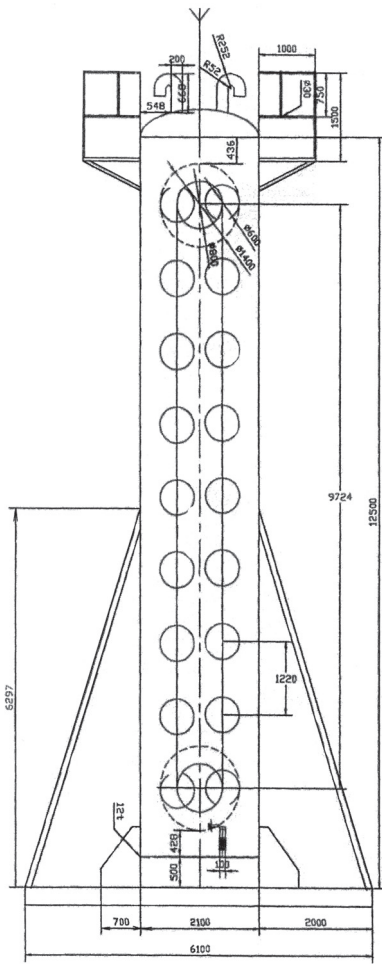


Fig. 2. A hydroelectric power plant with pneumatic accumulators and air injection

The following hydraulic engine to overcome an exergy limit of 100% was a machine using air injection into pneumatic accumulators [4].

A construction with pneumobottles [5] is a type of hydraulic engine (Fig. 3).

The advantages of such hydraulic machines-engines are high efficiency and ecological cleanness. The drawbacks are big sizes and low speed of power shaft rotation.

In the Northern regions, these machines are necessary to heat big volumes of water. This would require additional expenditure of energy and lower efficiency of the engine.

1.2 Internal-combustion engines (ICE)

Among the variety of internal-combustion

engines, rotary and rotary-piston engines are interesting for us as they are the most up-to-date machines [6].

Foreign motor rotary engines are known as Wankel engines [7]. Actually Wankel engine was almost the only engine to be developed by motor-car industry of Western Germany, Japan and France.

There were attempts to produce it in Russia as well. The best designs of Wankel engine have a rotor and stator's effective area of cycloidal form. During engine operation, its rotor makes epitrochoidal and hypotrochoidal curves. In order to prevent rotor jamming, one cog-wheel is set on the rotor while another one is set on the body (stator) Fig. 4.

We will omit the history of development of this engine and mention only its main

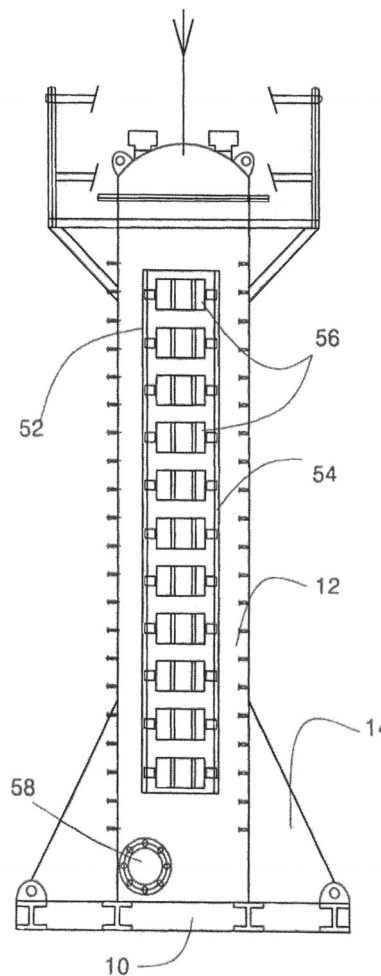


Fig. 3. A hydroelectric power plant with closed accumulators

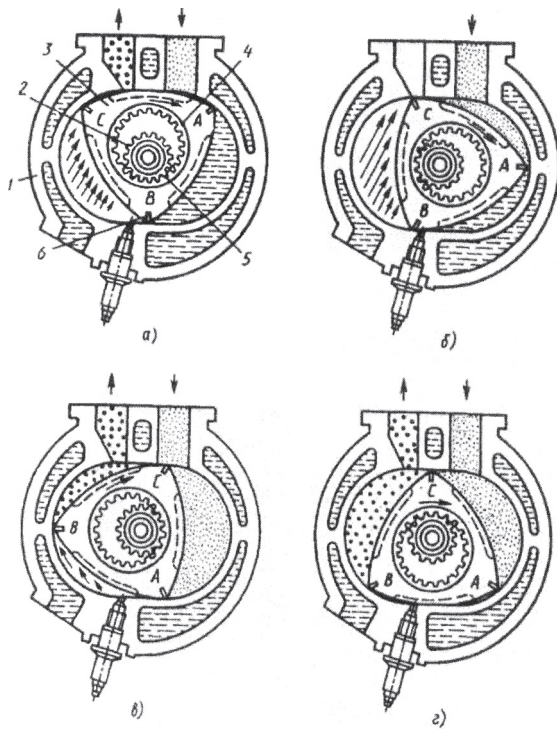


Fig. 4. Design of Wankel internal-combustion engine

disadvantages. They are:

- increased fuel and oil consumption by 10-15%. Hence, the engine cannot produce “clear” exhaust in atmosphere.
- the engine is heated during fuel combustion and, therefore, a cooling system is needed.
- limited frequency of output power shaft rotation is 6,000 rev/min while it had been planned to be 35,000 rev/min.
- quick deterioration of effective areas of the rotor and the body.

These drawbacks have influenced market entry and the spread of the engine.

An interesting design of ICE was suggested by an engineer called V.S. Putin [1].

His engine has six identical sections. Two of them operate as compressors to compress fuel mixture in combustion chambers of the four working sections. Each section has six simultaneously rotating rotors. Their axes are connected with the output shaft by tothing. Fuel is fed by compressors in the central part of engine where it is electrically ignited.

Ignition occurs when the combustion chamber

has the smallest volume. Then rotors turn through a press of gases and power takeoff happens at the output shaft. In the end of the explosion stroke rotors are disconnected and exhaust occurs.

A long cycle of working gas expansion happens in such an engine [1]. Fig. 5.

Rotary ICE of V.S. Putin’s design has the main drawbacks peculiar to the above mentioned rotary engines. Moreover, it has a rather complicated design and is not ecologically clean. Experts think that rotary-blade ICE has big prospects [1]. Fig. 6.

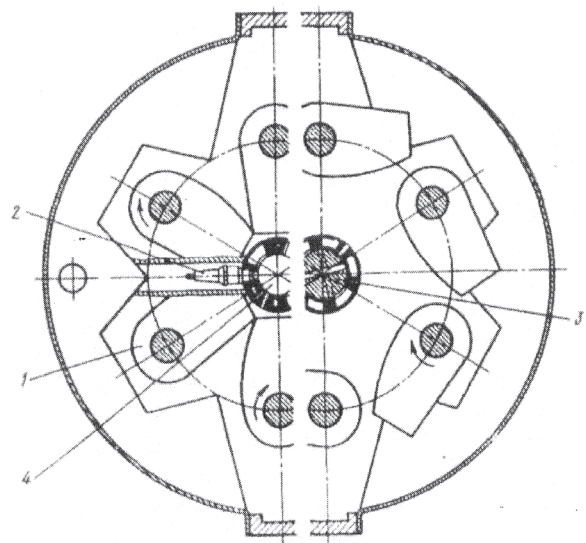


Fig. 5. Rotary ICE by V.S. Putin

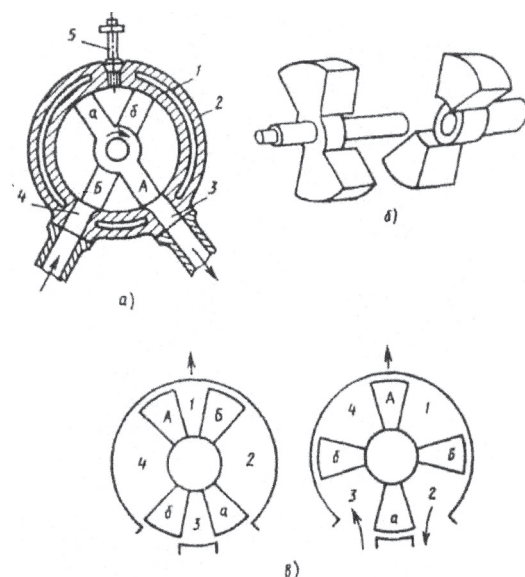


Fig. 6. Scheme of rotary-blade ICE

This type of ICE can leap to high rotation speeds. It has a simple and reliable gas distribution system: only two blades (rotors) revolve on shafts dividing the internal surface of the cylindrical body into four closed bulks. Both rotors are kinematically connected. Closed bulks are formed between the blades, where working cycles of the ICE can take place. Special compressors are not needed for this ICE unlike the Wankel engine. Its blades are equal to an octacylinder four-cycle engine [1]. Unfortunately, it uses the traditional fuel and this drawback outweighs all its advantages. Exhaust pollutes the environment and oxygen from the environment is destroyed during fuel combustion. It can lead to an ecological disaster.

1.3 External-combustion engines

On September 21st 1816, Robert Stirling's engine was produced. External-combustion engines differ from internal-combustion ones by having higher efficiency. For example, the Stirling's external-combustion engine has efficiency of 54% now, which is a great advantage in comparison with internal-combustion engines. During the Stirling's engine operation, far less exhaust is emitted into the atmosphere but it still combusts fuel indirectly. This process is accompanied by the destruction of oxygen, which is why external-combustion engines have no prospects in the future (Fig. 7).

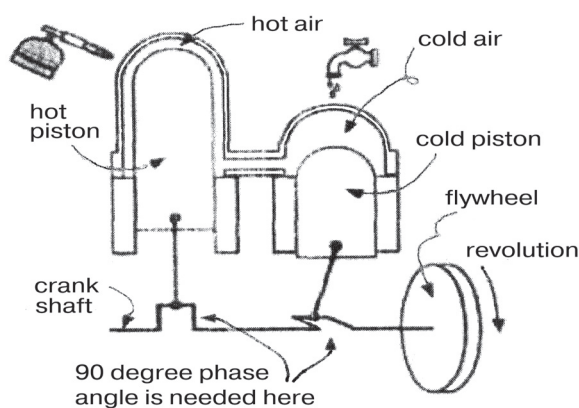


Fig. 7. External-combustion engines

1.4 Air motors

Air motors are spread in regions where wind speed on average exceeds 6-7 m/s. It is known that air motors are divided into two big classes: with a horizontal pivot pin and with a vertical one. Its labour bodies can be blades, turbines, sails etc.

The main advantage of air motors is the absence of a fuel combustion process and the ecological cleanness of energy production. The drawbacks are low efficiency, noise effects and disability to work using wind of low speed [8].

Prospects of air motors use are rather good.

It is only necessary to remove the known drawbacks. In the work [9], a design of a wind power station working regardless of wind speed with high efficiency is given.

1.5 Jet engines

Solid-propellant jet engines appeared as early as in ancient China. About 1680, "a rocket workshop" was opened in Moscow [1].

The efficiency of the jet engine is characterized by specific impulse. Specific impulse of contemporary jet engines is 30,000 N s/kg. Such an enormous specific impulse allows using these engines on up-to-date solid-propellant rockets and accelerators.

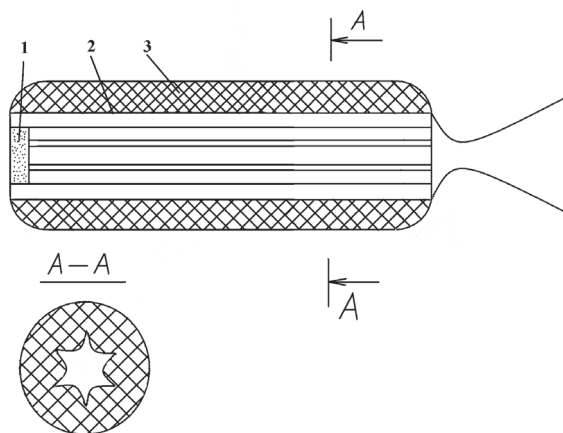


Fig. 8. Jet engine

Other types of fuel for jet engines can be liquids and gases. The efficiency of jet engines is higher than the efficiency of ICE while losses are from 12 to 30%.

The engine, however, has its drawbacks: strong environment pollution takes place due to a big quantity of combusted fuel.

1.6 Gas turbine engines

Contemporary gas turbofan engines have a ratio of air flows along a by-pass canal and direct one equal to 3:1 or 4:1. It allows using a fan with one row of blades [10]. A compressor of the engine consists of three blocks: a single-stage blower, an intermediate compressor and a compressor of high pressure (Fig. 9).

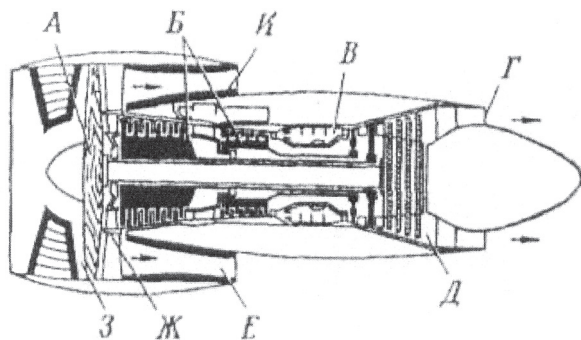


Fig. 9. Contemporary gas turbofan engine

The efficiency of a gas turbofan engine is higher than the efficiency of the intermediate jet engine while noise characteristics are much lower.

It is necessary to mention that the design of a straight air flow jet engine is much simpler than that of a gas turbo engine, but both engines use fuel combustion. They destroy a lot of atmospheric oxygen and, therefore, cause irreparable harm to humanity.

1.7 Nuclear jet engines

Specific impulse of jet engines using solid, liquid or gas fuel can increase up to 4,500 – 5,000 N s/kg [1]. It is known that one kilogram of uranium can emit the same quantity of energy during its decay as 1 million 700 thousand kilograms of petrol can emit during combustion. Even the bigger amount of energy can be obtained by means of fusion.

Of course, a fantastic amount of energy can be obtained by the induced decay of a proton [11]. In the future, water can be an energy carrier able to entirely substitute oil and gas. If we take the combustion of traditional energy carriers as one, nuclear decay is 10^2 , fusion is 10^3 , and the induced decay of proton is 10^5 . We just need time to design such energy machines. The nuclear jet engine with solid reactor is shown on Figure 10.

It consists of a chamber – 1, a reactor – 2, a turbine – 3, a pump – 4 and a vessel with the working body - 5. Its core is made of a set of fuel elements. The reactor has a control system.

Outflow velocity is 8,000 – 9,000 m/s. It is limited only by material of the nozzle. Such a complicated and dangerous construction must be extra safe. Despite this, its design has been currently developing.

Fantastic projects of impulse nuclear engines exist. They suggest that nuclear bombs of more than 10,000 kg in trinitrotoluol equivalent must

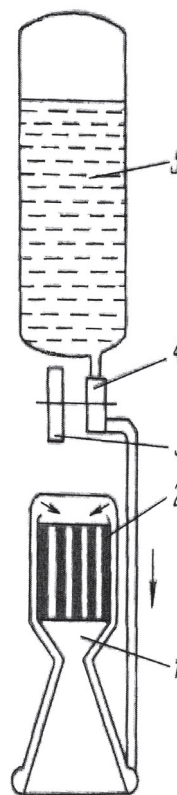


Fig. 10. Nuclear jet engine

be exploded [11]. These projects are even harder to implement.

1.8 Nuclear engines

The use of nuclear engines for ship machinery and electric power stations began more than 50 years ago. The efficiency of nuclear electric power stations does not exceed 30-34%. It is connected with the fact that nuclear reaction heats liquid and steam rotates the turbine, which rotates the electric generator.

This multistage process of transformation of nuclear energy, naturally, lowers efficiency (Figure 11).

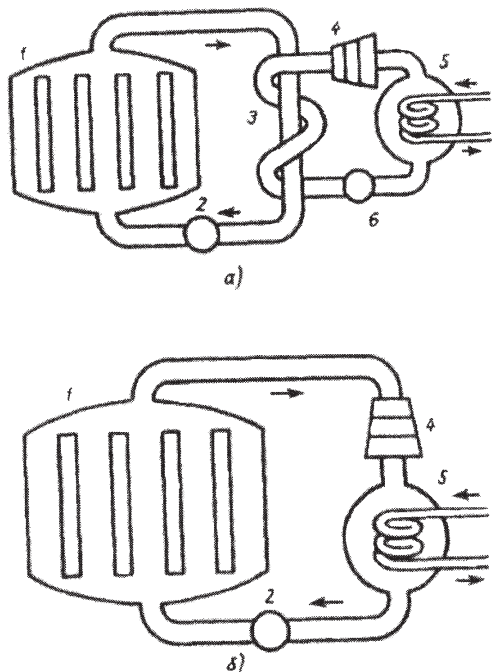


Fig. 11. Nuclear engine

A certain advantage of nuclear engines is small mass of “fuel” in comparison with traditional types of fuel (coal, oil).

1.9 Ionic engines

Three schemes of ionic engines are known. They differ according to ionization methods. The first ionization method is based on surface ionization; the second one is based on electron bombardment; and the third is connected with electric arc source of ions formation [1].

All ionic engines have small specific impulses of tenths of a newton and consume a tenth of electric energy kilowatts. These engines are used in spacecrafts for correction of their trajectory or position relative to sun. (Fig. 12)

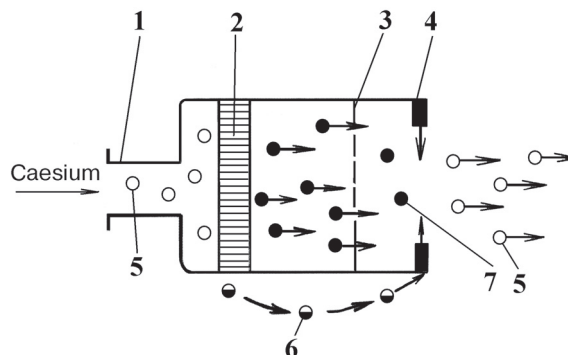


Fig. 12. Scheme of ionic engine

Ionic engines are engines of open space. Due to the high outflow velocity of ions, it is possible for a spacecraft to gather high speed but electric energy consumption will be too high, requiring thousands of kilowatts. But how can we get it? [1]

Open space engines are neutrino, photon, plasma, and torsion engines.

Their use on Earth is limited due to a small specific impulse, therefore, we will not consider them in details [12].

1.10 Electric engines

Electric engines appeared in 1821. First, electric engines using direct current were used. Such electric machines could operate as generators [1].

Now electric machines and generators using direct and alternating current as well as constant magnets are designed. Ac converter-fed motors are perspective as they meet the industrial requirements.

These electric motors are easily controlled within the limits from 100 to 25,000 rev/min and have different powers. AC converter-fed motors have high accuracy of rotation speed and operate almost noiselessly.

Another perspective electric engine is a machine of a Japanese inventor called Kohey Minato. According to his words, the engine has an efficiency higher than 300% [13]. Many magnets with their poles located at the same direction towards rotor's rotation are attached to the rotor of his engine. There also are stabilizers for balancing the rotor's rotation on the rotor [14].

The engine consumes a minimal quantity of energy, operates noiselessly and generates no heat.

A generator of free energy (engine) Lutec 1000 created in Australia by Ludwig Brits and Victor Christy is even more effective [15]. Its power is about 1 kW; it works autonomously.

A magnetic engine of A.E. Rumin is also autonomous and can reach higher power output [16].

Searl's magnetic engine made by S.M. Godin and V.V. Roschin [17] generated about 7 kW of electric energy during autonomous operation mode.

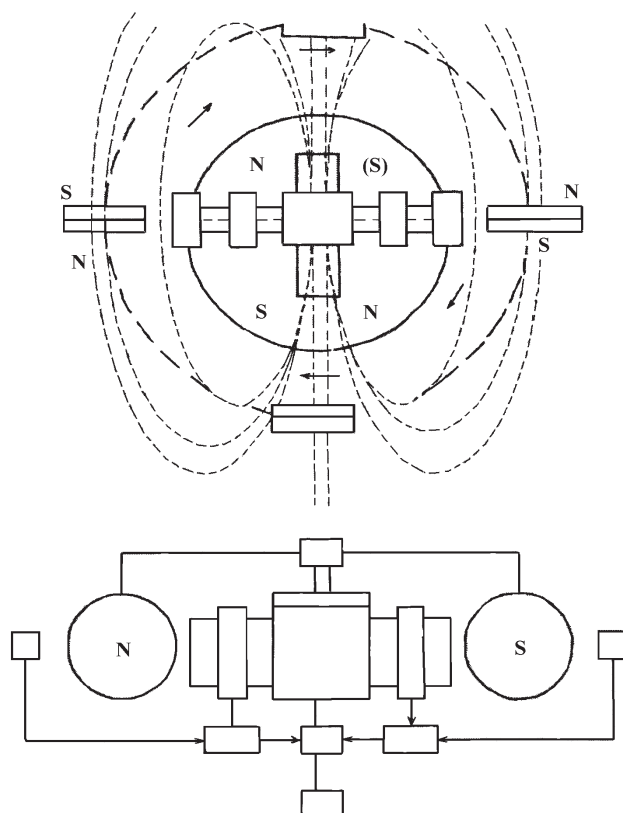


Fig. 13. Dudyshev's magnetic engine

Despite all advantages of magnetic engines, they have a common major drawback: heavy weight and limited resource of magnets. In order to recharge magnets, 20 times more energy is needed. (Figure 13)

1.11 Steamers

A steamer of I.I. Polsunov consisting of two cylinders is the first steamer. (Figure 14)

There were a slide-crank mechanism and a flywheel in the machine. The first steamers of this type were used almost without limits. The steamer has typified piston internal-combustion engines.

The two disadvantages of steamers overweigh, as time goes by, all their advantages.

First, the efficiency of steamer is too low – about 6%. The weight of the machine is enormous in comparison with its power. In other words, steamer could not compete with ICE in efficiency and specific power.

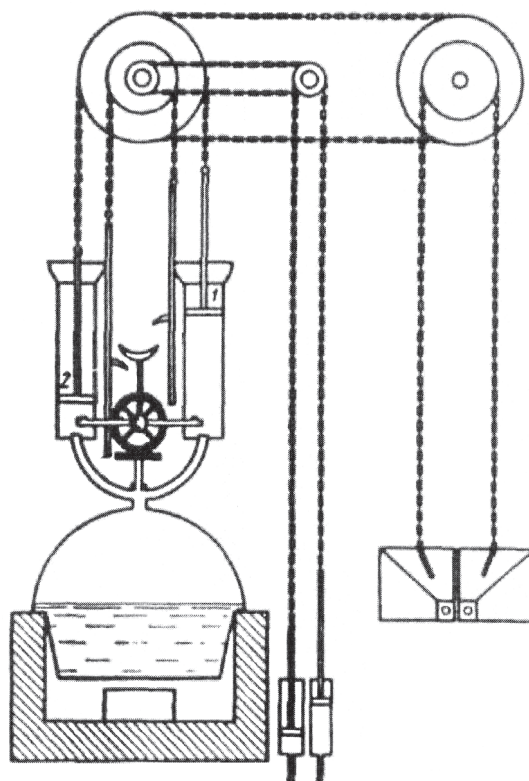


Fig. 14. I.I. Polsuniov's steamer

1.12 Quantum engine

The idea of using water as fuel appeared long ago. It is known that engines using water have not become a commercial product. There were several reasons for that.

The first reason is that, during reciprocating motor's operation in water, hydrogenation of the combustion chamber's surface, embrittlement of metal and its quick destruction takes place.

The second reason is the "fuel". It must be refined. And the third reason is that oxygen is destroyed during water combustion.

An attempt to eliminate these negative effects was made in Russia [18]. In 2000, an original design of the engine with a liquid piston and a system of water injection was developed. A difference of a new kind of a machine was that the surface of the combustion chamber was covered with anti-hydrogenation mixture. Travel took place in two, four, eight etc. cylinder engines.

Energy characteristics of these engines are twice better in comparison with those of ICE. (Fig. 15).

Due to lack of traditional elements, a quantum engine has very high power output. Unfortunately,

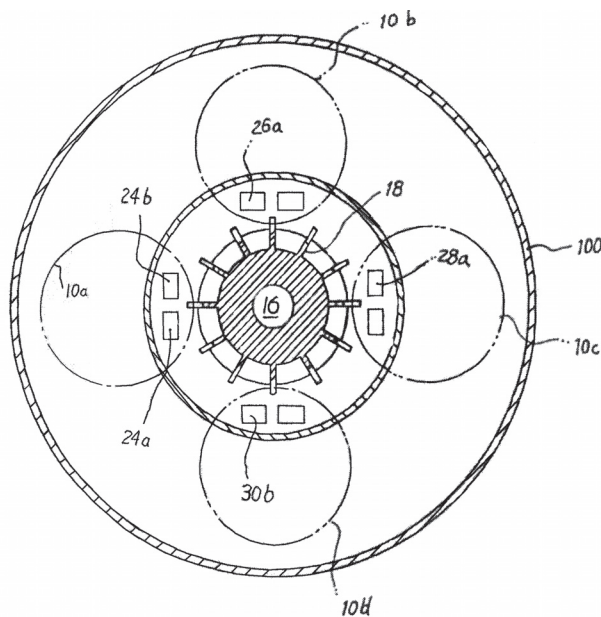


Fig. 15. Design of quantum engine

it has some known disadvantages of ICE. In the ecological sense, the engine is equal to an ICE using hydrogen fuel.

Outlet water steam contributes to the development of the greenhouse effect. Moreover, a quantum engine burns oxygen. Due to this, this type of engines has not been developed.

1.13 Vibratory engines

Constructions of Tolchin are the most original among known vibratory engines. Due to this, Tolchin's machine is said to have torsion mechanics.

A simple test should be implemented: if the Tolchine's machine is hung on a thread, it stops moving in space. Now torsion engines exist only in theory.

The editor's note: We don't agree with the opinion of the respected author. Inertia device by Tolchin as well as other torsion systems have already proved their efficiency. Alexander V. Frolov

1.14 Molecular engines

An idea to use vortex motion of molecules in an engine appeared in the beginning of the new millennium. It is known that the speed of air molecules motion reaches 500 m/s. Chaotic motion of molecules, however, does not lead to energy generation. Due to this, organized motion of molecules in a molecular engine is made using a special technique.

They produce a rotational moment at the power shaft. During this process, no fuel is combusted. There is a temperature difference in a molecular engine but it is insignificant, so special materials are not needed [20].

The first testing of a molecular engine at a test bench has shown that it reaches from 964 to 16,700 rev/min under an environmental temperature of +20-23 C and inlet pressure of 0.01 – 0.09 atm. [21] Air quality stays the same before and after operation.

The following testing stage was carried out with a load.

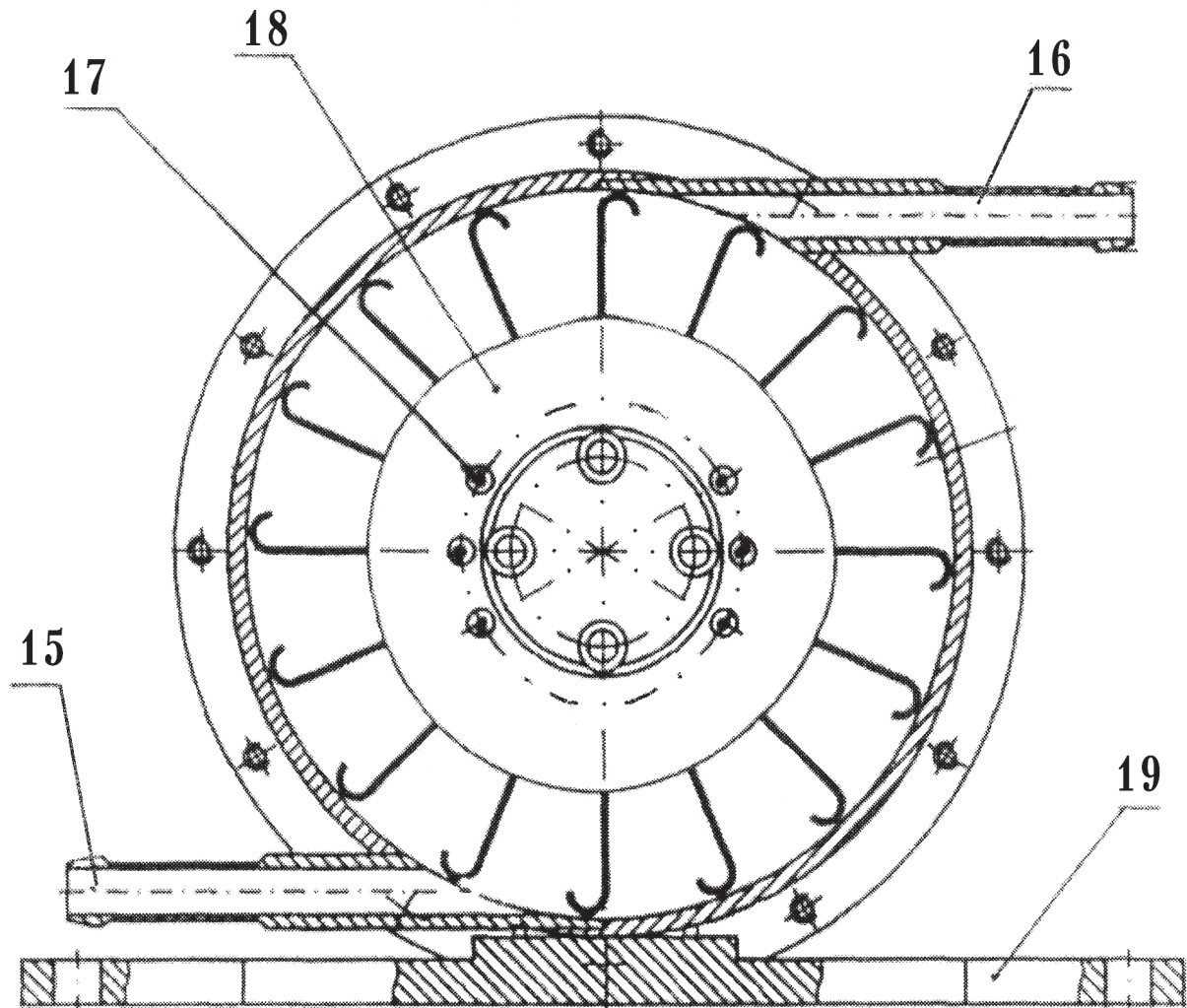


Fig. 16. Molecular engine

For this purpose, a molecular engine, made according to a patent application of the Russian Federation, was used. The designed capacity of the engine was 200 kW.

It became clear that its actual power is higher while energy consumption is 33 kW/hour.

$$N_e = M_{rot} \cdot n / 95154 = 195 \cdot 12400 / 95154 = 253 \text{ kW}$$

Hence, its efficiency is:

$$\eta = 220 / 253 = 0.869$$

This is a good result in comparison with existing machines-engines. A design of molecular engine is shown on Fig. 16.

Conclusion

1. An analysis of contemporary operational engines shows that use of fuel including nuclear one does not allow obtaining efficiency higher than 54% so far;
2. Use of fuel leads to disastrous environmental pollution;
3. Appearance of no fuel machines-engines does not provide for necessary specific power and longevity;
4. Development of molecular engines can lead to the design of machines-engines operating in autorotation mode without traditional fuel combustion.

Alt – Science in Russia

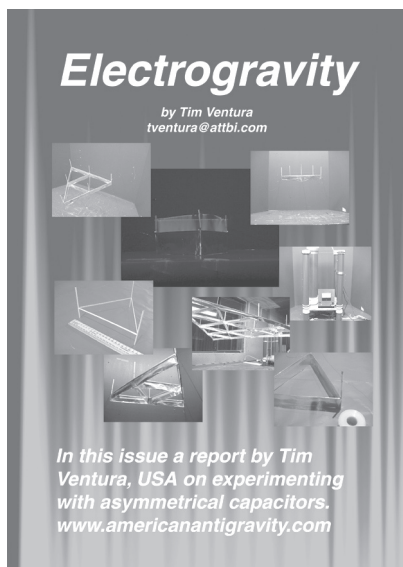
By Tim Ventura, USA
Published at www.americanantigravity.com

Alex Frolov is the director of Faraday Labs and the editor of New Energy Technologies Magazine, a breakthrough-science publication published in St. Petersburg, Russia. His role gives him a unique perspective on Antigravity research in the Russian Federation and beyond, and he offers his insights as both a journalist and innovator.

AAG: I'd like to start out by thanking you for the hard work and expert analysis that you provide in New Energy Technologies Magazine. It's building a growing audience around the world, and performs a valuable service in providing in-depth coverage on a diverse array of breakthrough and emerging technologies. I'd like to learn a little bit more about your own personal background, as well as the history of Faraday Labs and New Energy Technologies Magazine.



Alex Frolov: Founder & Director of Faraday Labs.



Issue #3, 2002: American Antigravity's 1st article!

Frolov: My practical skills are mainly related to electronics, which I started learning when I was 12 years old. When I was 14, my father and I built FM wireless transmitters and other

simple devices in our home lab. He was a Russian military officer, and for me electronics was the best idea for the higher education. In 1979 I entered High Military Engineering University of St. Petersburg and in 1983 I received a master's degree in wireless telecommunications. I served as an officer in the Russian military from 1983 to 1989, and from then until 2001 I worked full-time in telecommunications; first as an engineer and later as a manager.

My free time during this period was devoted to research work in my home lab and the organized publication of my ideas, and began taking part in scientific conferences. In 1996 we organized international alt-physics congress in St. Petersburg. I also began a written correspondence with Thomas E. Bearden, Rolf Shafranke and other alt-energy researchers...

In 2001 a private investor from Moscow offered money to create a company to develop alternative energy research. In 2002 the company Faraday Lab Ltd was re-organized with other investors based in UK. One of our activities is the publication of the Russian-English magazine "New Energy Technologies". It is not profitable, but it is useful work.

AAG: You publish more than just Russian research – in fact, you’ve graciously published a few articles that I’ve written, in addition to several other American and European authors. In all honesty, I’d never have imagined that I’d be published in Russia, but it’s been a wonderful experience. How would you say that the new spirit of globalism on the Internet has helped New Energy Technologies?

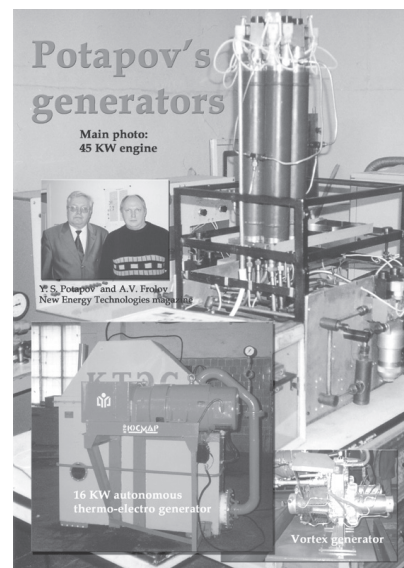
Frolov: Yes, there are some positive aspects to increasing globalization. We can use the Internet, for instance, to either get correct information or wrong information on a variety of subjects - but in any case the most important and serious research results can never be published or demonstrated in the mass-media because of national security concerns. So, I never take seriously email or web information before practical testing in my lab.

AAG: The American media hasn’t told us much about Russia lately. How is the economy, and are wages and the standard of living improving for the average person?

Frolov: Hmm... what can I say about our life here? We’re not similar to the cretins portrayed in Hollywood action-movies. Our economy is really growing and wages now are from several hundred USD up to several thousand USD monthly. Also many people in Russia are trying to develop some of their own businesses in fast food, car services, tourism, and hotels, etc... I see that the cost of life in Moscow and St. Petersburg is so high enough to be compared with New York. Many Russians own real estate and take vacations in Europe and other popular destinations. So, my conclusion is that our country is now developing from the first steps in privatization to a stable period of controlled capitalism.

AAG: New Energy Technologies Magazine always provides a unique coverage of ideas that we literally don’t hear about anywhere else, and it would be great to learn a bit more about your recent successes. Can you give us an overview of some of your recent breakthrough stories?

Frolov: The main topic for now is research on autonomous air-vortex power plants. The author is Yury S. Potapov, who also developed high-efficiency water vortex heaters. The idea is quite simple: to generate a controlled, self-powered tornado and to use its power. We have some information about workable 50 KW and 200 KW devices, but now it is necessary to build our own device to see how it works, and then to start production and sales. It may be the shortest path to a fuel-less power industry since almost parts of the device are standard production components: air compressors, turbines and electro-generators.



Issue # 1, 2004: Closeup on Potapov's generators

We’ve started a project to build and test a smaller 37KW unit in autonomous mode.

It should be quite interesting to read our review about Prof. Alfred Evert, papers from Prof. Dudishev and other articles. Please visit our web site <http://www.faraday.ru> to read contents of publication from 2001. The collection of all articles can be ordered as CD.

AAG: During the cold-war, Russian science did a lot of work on Torsion and Spin Fields that western science knows virtually nothing about. In fact, even the terminology is confusing to most western scientists, who have only a foggy notion what these concepts are. Can you give us a brief overview on what a Torsion Field is, and how they might be used to create Antigravity effects?

Frolov: I think that the name Gennady Shipov is well known. He is a theorist and his work with Akimov also is known. In their books the notion torsion is explained as a 4-dimensional rotation. Please read their work. So, it is not a mechanical torsion! But from the other hand, the rotation of any mass will involve some part of aether in rotation and we can see some local aether-pressure gradient in an axial direction – it is quite clear and it is related to AG effects.

AAG: On the subject of “torsion”, there’s been a lot of confusion about whether the term used by Russian scientists is the same concept described in Einstein’s Unified Field Theory. For those of us wanting to learn more about this, can you provide any good reference materials, and tell us if there’s a connection to Einstein’s “Metric Torsion Tensor”?

Frolov: Yes, sure it is related notions. To see the connection please find link between Einstein’s space-time metric and aether flow. Let’s say that the space-time metric is determined by direction and density of the aether flow. You can use mathematics but in the popular view we can say that the torsion effects are results of local changes in the aether density. In this case this density determines the time-rate factor and other spatial metric properties.

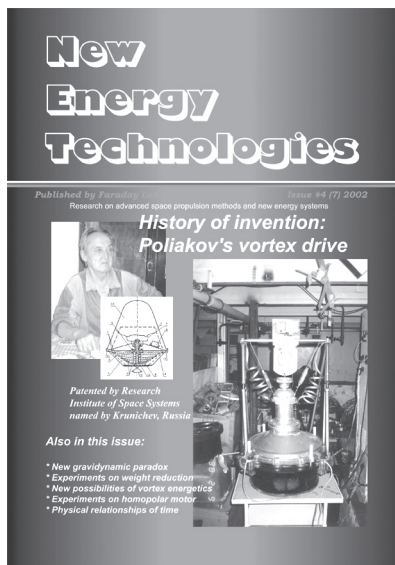
AAG: I interact with people all over the world, and one of the things that strikes me is how unique American perspectives are on some of the Antigravity “mythology”. Is there a Russian perspective on Roswell, Area 51, and American UFO mythology?

Frolov: UFO’s aren’t an area of serious interest to us, but the positive aspects from any information are new ideas that form the basis for new technologies.

AAG: You know, it seems like there are a lot of advantages to building a new technology business in modern Russia – it is a country with substantially lower labor-costs, and yet has some of the best scientists in the world. Are private companies beginning to move into the Russian economy and take advantage of the assets that it can provide to the technology industry?

Frolov: Yes, private or mutual state/private investments in new technologies are developing in modern Russia. Sometimes we’re not as experienced in international corporate management, and due to this many Russian high tech companies can not take leading positions in the world market. We need serious experienced international partners for this stage to avoid losses of high tech breakthroughs.

AAG: The Russian State News Agency, Novosti, recently published an article suggesting that scientist Valery Menshikov had developed a new form of inertialess propulsion drive that would be seeing use in the near future in Russia’s space program. You’ve suggested that Menshikov’s work uses a form of “liquid gyroscope” based on earlier research by your close friend – Dr. Poliakov. Can you tell us a bit more about how this device produces propulsion, and perhaps provide some background information on the relationship between Menshikov and Poliakov for us?



Issue #4, 2002: Info on Dr Poliakov’s AG-Drive

Frolov: We’ve published several articles about this type of propulsion. Dr. Spartak Poliakov developed a device which rotated 10 kg of mercury. I visited him in 1998 to make a video and publication. The axial propulsion force was

detected only during some time after the start. Dr. Poliakov tried to get support from officials. Dr. Menshikov developed Poliakov's idea but in his work the effect also is detected for only 30 min after the start.

I modernized this idea and designed a small device. Sure, it can be demonstrated... and in my version, the axial force is permanent. It works with 50 grams of water rotated by 12VDC motor. My Russian patent claim was filed in 2002, discussed and rejected in 2004. Who is interested to develop this technology seriously? I've tried to develop local contacts but it seems that they are not interested. Perhaps we can build a serious international team to pursue this research further...

AAG: Since Novosti is a state-run news agency, it raises the question of whether the story about Menshikov's work was actually a political statement by the Russian government about the need for breakthrough technologies in our space program. Do you think politics played a role in Novosti's story?

Frolov: I'm not involved in politics, and don't know offhand. Novosti is a quite serious agency, but they are not experts in technological news. So, with regards to your question, if my positive answer means real investments for Menshikov, then I must insist that you need to see the more modernized approach in my lab.

AAG: In 1992, Russian scientists Sergei Godin & Vladimir Roschin built an SEG replica that they claimed produced remarkable results. One of the breaking news stories this year is that they're building another prototype, and expect to have results in the near future. Can you tell us anything about their research, backgrounds, and what they expect to find?

Frolov: I spoke Mr. Godin two days ago and their work is in progress. They have a good investor. You can read news in our latest issue of New Energy Technologies. In general this idea is self-rotation aether vortex produced by crossed E-x-H fields. It is quite an interesting device, but I think that future fuel-less power industry can use more simple and safe devices;

for example, the air vortex power plants by Potapov. I hope to start a 37KW unit this month.

AAG: Evgeny Podkletnov is perhaps Russia's most well-known gravity-researcher. Although he now lives in Finland, he still conducts his research in Moscow, and claims to be generating "beams of force capable of shattering brick and warping metal like a sledgehammer". However, one of the concerns has been that he hasn't provided any photographic or video evidence of these claims. What are your thoughts on this?

Frolov: We have clear theory of this effect. Prof. Butusov is our scientific adviser and his research on De Broglie waves (matter waves) are a clear way to the generation of longitudinal waves in aether. I believe that it is the basis of Podkletnov's effects. We have our own results with small low power device. It is not a superconductor, but just a rotating electric current circuit designed in our lab according to Prof. Butusov's idea was to produce the longitudinal waves in an axial direction. In 2003 we tested influence of this wave on radioactivity and we have got some positive results. Really it was quite weak effect since the current was only about 0.5 amps. Dr. Podkletnov used 10,000 ampere currents. We are looking for customers to develop this topic.

AAG: One of the technologies that you've covered was a form of "Time Control Chamber" – can you elaborate a bit more on how this chamber worked, and what kind of results it produced?

Frolov: It was joint project with Dr. Vadim Chernobrov of Moscow. I proposed the idea of aether density control and he proposed a specially designed magnetic monopole. In the central area of this magnet monopole we can detect some changes of the time rate (about 5%). The idea of aether density control can be realized also by means of non-electromagnetic methods. The magnet monopole is quite an unstable device, powered from external electric source. We submitted the invention to the Russian patent office but I see that 3-years of



Issue #3, 2003: New time-control technology!

correspondence is not resulting in a positive patent. So, we need a serious partner to develop these very real effects for medicine, aerospace propulsion, and radioactivity control.

AAG: After World War-II, both the United States and Russia participated in post-war operations to secure secret Nazi-technologies. Operation Paperclip was the United States version of this, and secured a number of German rocket-technologies after the war. However, Nick Cook's investigation of the Nazi-Bell device (a torsion field generator) has led me to wonder if Russia perhaps acquired some more interesting secret weapons. Now that the era of secrecy is coming to an end, are any secret WW-II technologies coming to light?

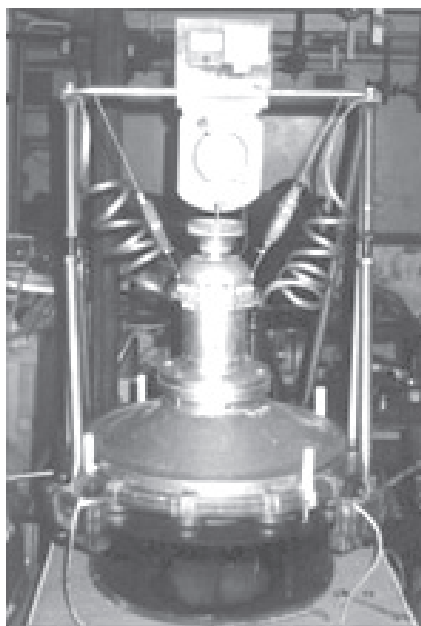
Frolov: I am getting information about the Russian secrets from USA publications, so you know more than me in this area.

AAG: I personally believe that despite the economic challenges that Russia has been facing, it remains an intellectual powerhouse of innovation, and the articles that you've published certainly support that premise. How do you see the future of Russian innovation evolving over the next decade and beyond?

Frolov: I see that the economics of modern Russia is based on oil-sales mainly, but it's a

limited source of income perhaps only for another 20-50 years. So, the positive future of Russian economics can be estimated as an intellectual factory of innovations, and the main part of this business will be a new fuel-less power industry.

The Poliakov's Vortex-Drive



In April 2005, the Russian State-News Agency Novosti ran an article stating that Dr. Valery Menshikov of Moscow's R&D Institute of Space Systems intended to test an 'inertialess drive' to provide long-term space propulsion. A liquid or solid-state propulsive mass moves along a preset tornado-shaped trajectory inside this engine, thereby ensuring sustainable propulsion.

The device being tested is a variation on the "Vortex-Drive" - an inertialess propulsion system developed by Dr. Spartak M. Poliakov, a Graduate of Kishinev State University, and an experimental physicist with over 47 years in the electronics industry. He has authored over 50 scientific papers, and a recent book entitled "Introduction to Experimental Gravitonics". The photo above was taken by Alexander Frolov during a 1998 visit to Poliakov's laboratory.

Tim Ventura

Oil: How much is left?

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www.infinite-energy.com

It may seem strange that a magazine advocating new energy would discuss oil issues, but the question of how much oil remains is very germane to the new energy business. There is a great deal of controversy about the urgency of discovering alternatives for oil, at least as an energy source. Having a realistic idea of how much time is available helps to properly go about the process of discovery and development.

An atmosphere of panic, for example, is not conducive to pursuing years of research and discovery before engineering a production version of a new energy machine. Instead, it leads to pursuing whatever might work, even if in the long run it is a poor choice that leads only to another set of problems. A rush to pursue, for example, nuclear power, wind power, and solar power in a big way in anticipation of running out of oil in a few years might saddle us with huge environmental and maybe aesthetic issues and divert huge amounts of man hours, capital, and material from pursuing much better alternatives.

Serious new energy researchers seem to be on the threshold of discovering ways of extracting energy either from the "vacuum" or from low energy nuclear reactions. Production of useful machines might take a few more decades, but the result would be so much better that it would be the wiser path even though we might be dependent on oil a little longer.

Oil has fuelled the greatest growth of civilization in known history, both in technology and population. The problem is that we have gotten hooked on it and are absolutely dependent on it for survival as we know it. For decades it has seemed like an almost perfect "miracle" fuel for this growth. It is abundant,

easy to get, easy to transport, easy to use, has high energy content, and can be used to make an endless variety of products so it is low in cost and used with abandon all over the world. In the last few decades, however, its dark side has become apparent. It has ravaged the environment, including land, water, and air. Many of the products made from oil wind up filling landfills and littering endless miles of roads and waterways. Its excessive use is impacting the climate, although how and how much is hotly debated. *Today we can't live without oil, but the question now is how long do we have to live with it?*

This question is of great interest to all mankind, but is especially interesting to the very few that actually might be able to do something about it. These few are likely to be among the readers of IE, because the best way to kick the oil habit is to find something that renders it obsolete as a source of energy.

It is very important at this stage of our development to have a fairly good idea of how much oil remains because of our extreme dependence and the extreme consequences of running out before alternatives are available at a cost that can be borne by a major part of the population.

Many doomsday scenarios have been proposed about the consequences of suddenly running out of oil. The most extreme say that most of the people on Earth will die and it will happen in this century. One of these is Matt Savinar, a young lawyer who has written a book about peak oil. The first line of the introductory letter on the homepage of his website (www.lifeaftertheoilcrash.net) says: "Civilization as we know it is coming to an end soon." The premise of his book, *The Oil*

Age is Over: What to Expect as the World Runs Out of Cheap Oil, 2005 2050, is based on this statement made in the beginning: "The Earth is endowed with about 2,000 billion barrels of oil. We have used about 1,000 barrels. As of 2003, we consume 28 billion barrels per year. 1,000 billion barrels divided by 28 billion barrels per year = 35.7 years of oil left. If one accounts for increased demand resulting from population growth and economic demand, that estimate is slashed to a paltry 25 years... The problem, however, is not 'running out of oil' as much as it is running out of cheap oil, which is the resource upon which every aspect of industrial civilization is built."

When I was about Savinar's age in 1974, I co-founded an energy conservation company and some of our planning was based on oil going to \$ 100 per barrel and the predictions that oil would run out in 30 years. The company was successful but never grew to the size we envisioned because oil got cheap again and, of course, 31 years later is not only in much greater use but is still cheap. I didn't really believe we would be out of oil in 30 years back then and I certainly don't believe it now. Things are just not that simple.

Oil consumption can be reduced by conservation or by using other sources of energy. Conservation cannot do the whole job and it takes time to implement on a scale that can make a major impact. The time is reasonably predictable because most of the technology is known and just has to be implemented. The very much unknown part of the transition process is how long it will take to invent and develop viable energy alternatives. Invention is virtually unpredictable and development of new technology is at best twice as long and twice as expensive as the estimates, often much more.

There are many technologies discussed in the new energy field that might take over for oil and many inventors and discoverers have made wild business plans, at least in their heads, that make them billionaires. Some of these ideas will eventually be developed, but all indications are that it will take quite a few

years. It is very important to keep things in the proper perspective. Of course, any developer wants to go as fast as possible, but real life issues such as cost, ease of use, safety, and environmental impact must be considered. It is a good idea to keep the supply and cost of the conventional sources in mind while planning for the new paradigm.

The concept of peak oil is backed up by a lot of data, as pointed out by Michael Ruppert in his article (p. 15). Association for the Study of Peak Oil and Gas has a mission to evaluate the reserves of oil and gas, study the depletion, and raise awareness of the serious consequences. They have studied the data from many countries and their evidence shows a world production peak at about 2005. This peak is called Hubbert's peak, after Dr. Marion Hubbert, who successfully predicted that U.S. oil production would peak in 1970. This data is confined to conventional oil and gas found and extracted in conventional ways. However, this oil may represent a small fraction of the true world reserves of hydrocarbons, so even though this is a very important point it is just one of many that must be considered to fully assess the world's energy situation in the long run.

The doomsdayers greatly underestimate how much oil is now wasted on trivial or even destructive uses and how much is simply wasted because energy is so cheap. A lot of oil is burned heating houses and running cars. Properly designed cities are much more efficient than suburban or rural living. Heating and transportation costs can be cut by roughly 80% or so without reduction in comfort or luxury. A lot of natural gas is used to make fertilizer that is either not needed or downright destructive. Farmers use natural gas to fertilize fields and then struggle to dispose of thousands of tons of natural fertilizer created every day in feed lots. There is something drastically wrong with this picture and there are plenty of other poor uses of energy that will be changed when oil and gas gets expensive.

A lot of this waste is a consequence of incredibly poor energy policy in this country and in most of the rest of the world.

Consumption is encouraged by keeping prices artificially low. This is done by subsidizing oil companies via tax breaks and low cost access to land and by great military expenditures on behalf of oil that are paid for by taxpayers and not the oil companies. Politicians buy votes with cheap oil. So the problem really comes down to the price of oil and how a large price increase will effect the world.

In the developed world we have a distorted view of the importance of oil. The richest one billion people use far more oil than the remaining five billion. A farmer in India uses natural fertilizer and travels by foot or animal of mass transit. He is little affected by the price of oil. The people most affected are the richest and most of them can handle a drastic price increase without disaster. At \$2 per gallon and 20 miles per gallon fuel cost, that equates to 10 cents per mile. If gas cost \$ 10 per gallon, the cost is 50 cents per mile. That is high if a lot of miles are driven, but it is well within today's technology to get 50 miles per gallon, which brings the cost per mile back down to 20 cents per mile. The cost of a bottle of water is about \$1. Of that, the bottle – which is made from oil - is about 4 cents. If the bottle goes to 20 cents, most people won't notice and those that do have plenty of alternatives.

One area of concern is space heating. Even a modest house can cost over \$1,000 per year to heat. If that went to \$5,000 it could be a serious burden to many. Given that a five times increase would probably take years to happen, improvements could be made to the insulation, windows, heating system, etc. to reduce energy consumption.

It is often possible to reduce energy consumption by a factor of two or better, which would result in a \$2,500 per year bill. That could still be a problem for some, but it is not so serious as to be endangering. Toys and other consumer goods will get more expensive, but the economy won't collapse and people won't die because of it. Ten dollars per gallon gas sounds very high but it is only about twice what Europeans pay now. Americans only spend about 6% of their income on food. This indicates a lot of

elasticity in the way income is spent. We can handle a five times price increase in fuel without disaster. But that increase would do amazing things to promote all the actions necessary to greatly cut consumption and find more oil if it exists.

There is great controversy over the question of how much oil remains and the cost of getting it. That would seem odd if the subject was restricted to science and engineering, but the issue is also tangled up in an unsavory web of governments, politics, and competing commercial interests, resulting in wars, corruption, waste, and great economic distortion.

In an enlightened market economy, the price of oil would be a good indicator of how much of it was left in comparison to demand. As supply ran low the price would climb, alternatives would be found, and a smooth transition would be made. We don't have an enlightened economy in oil or any other natural resource, not only for the above unsavory factors but because we do not properly account for the depletion of resources.

Changes in gross domestic product do not show reductions in a country's net worth as its resources are used up. We also do not account for destructive side effects of extraction or use of resources. The cost of wars that have been fought to directly or indirectly protect the supply of oil is also not included. Proper accounting would result in a much higher oil price now and a much more active search would already be on to find alternatives.

The technology has also grown immensely more complex since the first oil was essentially pumped from a simple hole in the ground and used much as it was found. We discuss some of the technical issues involved in this issue (John Rudesill, p. 18) and how they impact oil production even if supply is not the issue. It also seems that the old idea of "the more you know, the more you know you don't know" is in force.

We have "known" for over a hundred years that oil is a fossil fuel resulting from just the right sequence of biological and geological events over a span of millions of years. That is now

being questioned. There is compelling evidence that oil is not really a fossil fuel and there could be a lot more of it than we now assume. This theory is discussed in David Zebuhr's article (p. 11) and it adds a big new factor to the question of how much oil there really is. This oil is quite deep wells over 30,000 feet deep have been drilled to get it. This makes it a lot more expensive but at least it is there to ease the transition to alternatives.

There are other alternative sources for the fuels we get from oil (and gas). Billions of barrels of oil can be extracted from tar sands in Alberta, Canada, and other areas. The process is very disruptive to the environment and expensive and I suspect it would be much more expensive if the true environmental costs were included and proper accounting was done. Millions of barrels of oil have now been extracted from these sands and the process is being refined, but it will remain disruptive and relatively expensive.

Shale is another source of oil that has similar problems, but the oil can be extracted in great quantities if really needed (see Les Case's essay, p. 26). Another hydrocarbon source is hydrated methane that seems to lie in great abundance on much of the ocean floor.

Hydrates are compounds in which a molecule of a chemical gets trapped within molecules of water without chemically bonding. Methane hydrates are ice like compounds of methane and water. They are formed at temperatures of less than 7 C and at pressure greater than 50 atmospheres and occur in deep ocean sediments and permafrost. They are believed to exist along the continental shelves in many areas around the world. According to the United States Geological Survey, two small areas off the coasts of North and South Carolina contain the equivalent of 70 times the annual amount of natural gas used in the U.S. The energy available from this source probably far exceeds that available from the proven reserves of oil and gas.

In the 1930s it was discovered that natural gas pipelines in cold environments were getting plugged by gas hydrates. This stimulated a low level of research that greatly accelerated in the

1960s when the hydrates were discovered in gas fields in Siberia. Exploration began around the world, leading to an international research and development effort to discover the production potential for the hydrates. Japan and India began major projects to explore the production potential in the mid 1990s. The U.S. followed in the late 1990s by drilling experimental wells in northern Canada. This activity resulted in the signing of the Methane Hydrate Research and Development Act of 2000 to set the structure, goals, and timing for a DOE led R&D program. This is a development that is still in its early stages but is rapidly gathering momentum.

It will take a long and intense effort to safely extract commercial quantities of gas, but when it makes economic sense it will happen. Many people downplay the importance of hydrates because of the great difficulties involved, but many of our current technologies have been developed at great expense, often involving billions of dollars, many years, and sometimes many lives.

Another source of natural gas is coal beds. There is enough coal to keep the world supplied with energy for hundreds of years, but it is difficult to extract, handle, and use in ways that are friendly to the environment. In some coal fields a lot of methane is released in the process of mining the coal. It is now realized that this is a significant source of gas and that its capture and use is important not only to be able to use the gas but to prevent its release into the atmosphere, where it is a powerful greenhouse gas.

In some areas natural gas is abundant but oil is not. Gas is difficult to transport, except by pipeline. If a suitable market is not in range of a pipeline, the gas cannot be used except by first turning it into a liquid.

The most common method is to liquefy it by refrigeration and transport it by well insulated ships and trucks. Then it is re-gasified and transported to its final destination by pipeline. This whole process is not only expensive but potentially very dangerous. A fire in any of these steps can be serious enough to threaten an entire city.

Another way of creating a liquid from the gas is to turn it into oil. It is then much safer to transport and can be used for vehicles, especially in diesels. There is a huge plant being built in Qatar in the Persian Gulf to turn natural gas into an ultra clean diesel fuel. Exxon Mobil, Royal Dutch/Shell, ChevronTexaco, and others have committed \$20 billion to build this plant in an industrial park twice the size of Manhattan. This is a risky investment that will only pay if costs are well contained and the price of oil stays high. A project of this magnitude is an indication that money and technology can extend the supply of oil.

Ethanol is a very good fuel to use as a substitute for oil, but at this point it is made mostly from corn. Not only does that make it expensive, but in times of crisis it does not seem to make good sense to work on converting a good food source into fuel.

There is now an effort underway to extract ethanol from agricultural waste. It has the potential of significantly reducing the dependency of the U.S. on foreign fuel and reducing greenhouse emissions at the same time. The greenhouse emissions are reduced because if the waste is left to decay in the fields it releases CO₂ and the methanol when burned releases less greenhouse gas than gasoline. Also if biomass crops are grown for fuel, CO₂ is absorbed from the atmosphere. At this point it is far from proven that this makes economic sense, but millions of dollars are being spent on it.

Other sources of fuel include animal waste from food processing, solid waste that otherwise would go to a landfill, wood scraps, and gas from digestion of sewage. Incineration not only produces considerable energy but keeps waste out of landfills. It is amazing to me that they are so strongly resisted in most areas. Part of this resistance is fear, mostly unjustified, of air pollution and the other issue seems to be capital cost. Municipalities have little incentive to take the long view. This would change when fuel prices increase.

The world is heading into an era of very significant change, but it does not have to be a crisis. There are many ways to both cut fuel

consumption and introduce new supplies, and we have the time to do it.

There have been endless predictions of the end of the world and major crises.

In the late 1800s it was thought that Manhattan had reached the limits of its growth because of the problems caused by huge quantities of horse manure. Boston, New York, London, Paris, and other cities almost choked on sewage for years before building pipelines and treatment plants. The construction of these plants was expensive and at the time considered risky, but it was done. Thousands of lives were saved and improved and these cities grew way beyond what was conceivable at the time.

Many billions of dollars are available and thousands of people are ready, willing, and able to find solutions to our fuel problems. These solutions will be extensions of what we now know and understand, but they will be sufficient to get us to the next era of energy, which is in its early stages of exploration. This next era is at this point being pursued by a few pioneers who are knowledgeable about the current paradigms but sceptical enough and with enough imagination and ambition to make the first bold steps.

Margaret Mead once said, "Never doubt that a small group of thoughtful, committed people can change the world. Indeed it is the only thing that ever has." I have no doubt that solutions will be found.

There are plenty of smart, hard working people out there who will lead the way. As usual, the masses, and finally governments, will follow and life will go on. It may be a very different life, however, depending on the innovators who will lead the way.

There may be a great need for conservation and a Spartan lifestyle at least for awhile. This is not necessarily a bad thing. There is a lot more to life than wanton consumptionism. The period of scarcity would be followed by a period of abundance based on other energy sources probably combined with a healthy sense of conservation. Even if energy is "free" and "clean," the use of it has consequences.

Oil is left for 19 years in Russia

www.oilru.com

On the 26th of November 2003, a round-table discussion took place in Moscow. The topic discussed was: "Russian petroleum industry: using "old reserves" or development and modernization"? V. Balashov, vice-president of the Association of oil-gas equipment producers, A. Vavilov, member of the Federation Council of the Russian Federation, head of Financial Research Institute, S. Vainshtok, president of "Transneft" company, M. Magomedov, member of the Federation Council, I. Nikulin, director-general of "Tsentrform", A. Rakevitch, representative of the Geological survey department of "Gazprom" company, A. Krajev, deputy director-general of the Institute of geologic-economical problems and other experts participated in the discussion.

A report on this "round-table" discussion has been published by an analytical agency "Marketing i Konsulting".

The main question was: how long can Russia use its explored reserves of oil? According to the data presented by the round-table organizers, there is oil in the Russian bosom for 19 years. Responding to this, A. Krajev said that this is quite possible. However, there are a lot of undiscovered reserves in Russia. Now lands of Western Siberia are not used nor are the northern seas except the western part of the Barents Sea.

Answering the question why Russia prefers mining fields discovered during Soviet times and does not work on finding new oil reserves, A. Krajev told that it is necessary to get a license for exploration work implementation. Then, the works must be paid for and they are very expensive. In case, at last, one would be lucky to find oil, the field is put up for a competition. Thus, the explorer almost has no rights to use it. On top of it all, exploration costs are repaid to the explorer in case they prove that the amount is no less than they claim. Large oil companies are not interested in exploration either because, on the one hand,

it is expensive and, on the other hand, large companies do not count on it now.

As for the quantity of proven oil territories, according to the opinion of S. Vainshtok, it is impossible to determine how many years are left before oil comes to an end because there are wells in Russia and abroad, which have been officially empty for 3-5 years, but they are still used for oil extraction today. According to S. Vainshtok, the main Russian oil problem is that we sell our resources and spend money on food only. The social sector is getting worse every year; citizens' welfare is getting worse too. According to the words of the "Transneft" head, today oil companies experience a deficit of staff. It happens not due to a lack of people interested, but due to the fact that even workers must be highly qualified at modern plants. There are no places for their education because the system of trade and technical schools has been destroyed. If a company wants to educate a specialist itself, it is quite difficult and not advantageous for the company. The following question is the question of labour remuneration. Educated engineers from Tatarstan, Bashkiria, Chuvashia and other regions can be interested to work in the Khabarovsk region only if the salary is large. Wages cannot be as large and, therefore, attractive.

Continuing the topic of explored oil reserves, the discussion participants went on to the transport problem. It is known that Russian oil export increased twice during the last decade. Lately, construction of pipelines in the direction of Murmansk and China has been discussed. Regarding this topic, S. Vainshtok said that most likely the pipelines will not be constructed because today no oil magnate can guarantee they will not be empty.

In conclusion, it was said that oil will finally come to an end as a substance or an energy source and will be replaced by something else.

Innovation company of “Nornikel”

www.vedomosti.ru

As “Vedomosti” writes, after spending a year and \$30 millions, “Norilskiy nikel” has been convinced of the fact that the Russian Academy of Sciences (RAS) is not able to carry an innovation business. RAS has neither skills nor personnel for this. “Nornikel” is forming a special company, which will transform scientific developments into money and technologies.

In February 2004, “Nornikel” and RAS signed a cooperation agreement. The company invested more than \$30 million in research and development on the production of fuel cells. These devices are supposed to be used in hydrogen energy, which is considered almost the main alternative in modern energy based on the use of hydrocarbons. All in all \$11 millions were spent on the purchase of equipment, instruments, and materials for academic institutes. The rest of money was spent on organizational expenses and payment for researches’ work.

This experience turned out to be not very successful. At the disposal of “Vedomosti” a fragment of a letter from “Nornikel”’s vice-president Vladimir Pivnuk to RAS’s vice-president, Gennadiy Mesiats, was found. It contains a review of the research report given by RAS. In spite of a number of positive results, Pivnuk writes, reports on some R&D cannot be accepted, including, the fact that the researches did not give any information about the patent situation with R&D. In other words, the customer is not informed whether the results of the works, for which they paid, had been patented earlier.

“Nornikel” is investing hydrogen energy because this meets its interests: all metals produced by the company are used in “hydrogen” technologies in some way, Pivnuk explains. According to his opinion, these investments have not been wasted: “Nornikel” is 70% satisfied with cooperation with RAS. This is the part of development which has “a good potential of commercialisation”, according to Pivnuk’s words.

However, successful cooperation of “Nornikel” with academic bureaucracy will end at this point. The Academy of Sciences is suffering from ineffective management. “This is not the Academy’s fault, rather its trouble, because it is general knowledge that the Academy is in a grave condition concerning finances and personnel”, Pivnuk tells. There are no innovation mechanisms in Russia. Moreover, absurd barriers in order to prevent business corporations from financing science and commercialising scientific developments are erected here. “For example, the tax law allows academic institutes to purchase scientific equipment and instruments only using income, which they do not have at all, - explains Pivnuk. – As a result, corporate customers must transfer them funds for discharge of tax”.

As a result, “Nornikel”’s committee of directors has decided to found a separate National innovation company “New Energy Projects”. Pivnuk tells that its head will be the president of the holding company “Noviye programmy i kontseptsii” Boris Kuzyk. The company will directly work with academic institutes, which succeed in developing hydrogen technologies.

We have serious potential in fundamental research but the gap between scientific research and merchantable engineering supply is too big, according to the words of the investment director of “Russkiye tekhnologii” company Vladimir Bernshtein. “There are technologies concerning fuel cells in Russian scientific centers. However, competition between our academic science and western corporations is impossible due to the fact that western corporations already have not only R&D but also industrial systems using fuel cells.

That is why an initiative to found a private company with management directed toward commercialisation is the only right decision”, Bernstein tells.

Review of companies producing and selling vortex heatgenerators (VHG)

The review by Elena N. Artemieva

“Ecoteplo” company
<http://www.ecoteplo.ru/ts.htm>

Heat devices of HPS1 type (vortex heatgenerators) are an alternative heat source producing heat according to the basis of quantum physics.

“Ecoteplo” company has been developing, producing and refining heat devices for four years. During this time, 12 different models have been tested at a test board of the company. Now, the efficiency coefficient (ratio of produced heat energy to consumed electric energy) has been brought to 1.93.

Heat power stations have the following advantages: they are safe, ecological due to the absence of harmful emissions and radiations, compact, are simply designed and simple to install, and they do not require water chemical refinement. High efficiency allows reducing the pay-back period up to 1.5 years. Constant service staff is not required. The heat station satisfies the requirements of 3113-001-45374583-2003 Standard; it is certified. A heat

station with electric engines of a capacity from 2.2 to 45.0 kwatt is to be launched in summer.

The station can heat water up to 95 degrees.

The heat station of HPS1 is used in many regions of the Russian Federation and abroad: in Moscow, Krasnoyarsk and Stavropol regions, Tula, Nizhni Novgorod, Kalmykia, Noginsk, Chekhov and other cities, in Kazakhstan, Uzbekistan, South Korea and China. Regular stations were launched by a Moscow company called “Splain Center”, in the towns of the Moscow region called Lytkarino, Roshal and Domodedovo, in Lipetsk.

In cooperation with its partners, the company provides a full range of services beginning from the cleaning of internal engineering systems to the removal of solid-crystalline, corrosion and organic sediment without dismantling system elements at any time of year. The company can also develop a specification of requirements on designing, designing, installation, commissioning, training of the consumer’s staff and maintenance works. Supply of heat devices

Heat devices (vortex heatgenerators) Price and performance attributes. Price are given with VAT

Electric engine capacity, kW	55	75	90	110	160
Voltage, V			380		
Heated volume, cubic meters	5180	7063	8450	10200	15200
Water pressure at the output, MPa			0.15 ... 0.25		
Heat carrier’s temperature, C			95		
Mass, kg	700	920	1295	-	1715
Overall dimensions:					
- length, mm	2000	2000	2000	2400	2400
- width, mm	700	700	700	980	980
- height, mm			775		
Operation mode			automatic		
Price, (roubles)	262000	280940	308900	416700	537460

based on our stations can be implemented in the form of unit constructions. A heat supply system of buildings and internal engineering systems can be automated up to the level of an individual automatic control system of the plant. In case there is not enough room for the heat unit inside the building, it is installed in special containers as it was done in Klin, a town in the Moscow region.

“Centre-Les” company
<http://www.tvg.ru/generator.shtml>

Vortex heatgenerator. Patent # 26639 from 10.12.2002.

Field of application:

The vortex heatgenerator is an ecologically clean heatgenerator of the new generation without heating elements. It heats liquid by transformation of kinetic energy of moving liquid into heat energy. The heater is effective and universal: it can be used for heat supply systems as well as for hot water supply systems; it can operate using water, antifreeze and other liquids (chemicals, oil products, foodstuffs etc). Only flammable liquids are an exception. The hydro-vortex heater is a source of heat energy produced due to physical processes (cavitation) occurring in the system “liquid – device”. The

processes occur during rotation and forward movement of the energy carrier in the system under the influence of external forces. An electric-pump device provides for pressure and consumption of the energy carrier, which is heated to the predetermined temperature moving inside the suggested design of the vortex device.

The vortex heatgenerator is meant for heating of country-houses, cottages, greenhouses, workshops and other quarters with square from 100 to 160 square meters (Modifications “Vikhr-15, 22, 37” can heat considerably big rooms up to 12,000 m²).

Vortex heatgenerator is completed with the necessary fixings, has an automatic control system, and a high transformation coefficient (Tc) of electric energy, which was consumed by the pump, into heat energy of liquid. Tc = 1.6 : 1.85 due to the special technology.

Calculation of affordability for a square of 150 m²

VHG - 7.5 kW

Boiler’s work (hours/day)	12
Electric energy consumption (kW/day)	90
Electric energy consumption (kW/month)	2790
Expenses (rouble/month)	2790
Expenses (rouble/6 months)	16740

Performance attributes and prices

	VGH 3	VGH 5	VGH 7	VGH 11	VGH 22	VGH 37
Building’s volume, m ³	150	275	375	550	1100	1850
Building’s square, m ²	50	100	125	180	360	600
Engine capacity, kW/hour	3-4.5	5.5	7.5	11	22	37
Consumed energy, kW/hour	2.5	3	4	5.5	12	22
Mains voltage, V				380		
Working temperature, C				65-90		
Heat output, kc/hour	2580	4730	6450	9460	18920	31800
Operation mode				automatic		
Liquid volume in the system, l	40	60	90	200	400	600
Device’s weight, kg	50	65	90	180	350	460
Price, roubles	47771	62930	74090	88815	116498	123659

The warranty period is 12 months. Payment can be made in cash and cashless settlements of 100%. VHG is both a boiler and a pump.

“Infico” company
<http://www.infico.ru>

The heat device (vortex heatgenerator) of HPS1-055 is being made for order in 90 days. Its price includes the prices of the electric engine and the control block.

The devices are reliable, ecologically clean, compact and highly effective in comparison with any other heating devices.

Design and principle of operation

The heat device consists of a heatgenerator (HG) made in the form of a cylinder with disks of a special profile, inlet and outlet fittings. The heatgenerator has a booster of heat carrier motion and is connected with an electric engine. The heat device has measuring and control instruments.

Common data on control systems

A control system of the heatgenerator is installed in a control cabinet.

The heat generation device can include “Electric engine of the heatgenerator of capacity from 37 to 160 kW”; “Electric engine of the purge pump for the heat carrier of capacity from 5.5 to 35 kW”; “Electric engines of bolts with capacity of 1.5 kW”.

A switchboard is fed from a three-phase five-cable electric network system with earthed neutrality of TN-C-S type with a voltage of 220/380 V, 50 Hertz.

A control board provides for:

- Notching of the heat generation device;
- Automatic control (barring/stopping) of the heatgenerator according to a signal of the heat carrier’s temperature sensor;
- Protective power cut during overload of the heatgenerator, reduction of insulation resistance;
- Protective power cut during stopping of the purge pump for the heat carrier;
- Protective power cut during the heat carrier pressure deviation from the predetermined one (increase or decrease of pressure);
- Remote indication of emergency switching of the heatgenerator;
- Bolt control (an electromagnetic valve) of the heat carrier resupply according to a signal of the heat carrier pressure sensor.

The electric energy supply of the heat generation device can be provided with existing electric energy sources: switch-yards with a capacity of 250, 400, 630, 1,000, and 1,600 kW.

The temperature of the heat carrier is 95C. The operation mode is automatic. Head loss is 0.012-0.02 MPa.

Performance attributes and prices

Heat devices	Mains voltage, V	Heated volume up to, m ³	Water outlet pressure, MPa/atm	Mass, kg	Price, \$
HPS1-037	380	3250		540	11800
HPS1-055	380	5180		700	13300
HPS1-075	380	7063		920	14500
HPS1-090	380	8450	0.15/1.5 -	1295	15800
HPS1-110	380	10200	0.25/2.5	1350	20500
HPS1-160	380	15200		1715	25600
HPS1-400	6000/10000	40300		2500	agreed price

«Kaviton»
<http://kavitov.boxmail.biz>

The company sells vortex heatgenerators for the heating of country-houses, cottages, greenhouses, working areas and other areas from 50 to 30,000 square meters. The producer of the devices is “Acoil”, a company from Izhevsk. The license production contract for VHГ #1 from 25.03.2003. VHГ’s equipment designer is a scientific company “Yutmar” from Kishinev, Moldavia, in cooperation with “Acoil”, a company from Izhevsk, Russian Federation. Patent of the Russian Federation #2045715, certificate #8 from 26.01.1994.

The price does not include costs of automated mechanisms, delivery or installation. At extra cost, it is recommended to install a frequency converter in the engine. It will provide for the increase of the device’s output and also a smooth start and complete defense of the engine. Actual hour energy consumption on average per season is from 10 to 30% from the maximal capacity of the VHГ. In case a two-rate meter of electric energy is installed, expenses will be reduced by 30%. It is possible to install electric engines of high voltage up to 10,000 V. Production takes from one to three months depending on the specificity of the order and payment conditions.

Performance attributes and prices

Name of device	Voltage and power, kW/V	Mass, kg	Heated volume, m ³ asynchronous / ac converter-fed.	Length/ height, mm	Price, \$
VHG-1*	0.5/220	10	150 / 270	200/200	700
BTF-2	2.2/220	20	250 / 500	450/300	900
BTF-3	7.5/380	80	700 / 855	950/400	1350
BTF-4	11/380	95	950 / 1425	1100/400	1850
BTF-5	15/380	110	1500 / 2250	1250/400	2750
BTF-6	22/380	150	2000 / 3000	1300/400	3650
BTF-7	37/380	220	3000 / 4500	1300/400	5300
BTF-8	55/380	350	4500 / 6750	1400/500	6900
BTF-9	75/380	400	5600 / 8400	1600/650	9200
BTF-10	110/10000	520	8500 / 12750	1800/750	11300
BTF-11	160/10000	710	12000 / 18000	2000/800	13000
BTF-12	315/10000	1250	25000 / 37500	2200/900	17560
BTF-13**	500/10000	2300	50000 / 75000	3000/1000	25900

*Is under development.

**Depends on the type of the engine (asynchronous or ac converter-fed).

Prices are given in \$ without VAT. Reduction of 5% is given when purchasing 10 and more items.

“Noteka-S” company
<http://noteka.nm.ru/Instalations.html>

Specialists of the company have designed an optimal heatgenerator, which allows the generation and maintainance of a cavitation trail inside the liquid, twisted by vortex, not contacting the generator’s walls. It allowed a considerable increase in the efficiency of the generator. Now it is produced according to the

industrial patent #2223452 and the useful model patent #16618. What is necessary for the heatgenerator “NTK” to operate? A three-phase electric energy supply with a voltage of 380 V and cold water must be lead to the object. Today vortex heatgenerators of “Noteka-S” company heat buildings and constructions in 38 regions of the Russian Federation. They also work abroad: in Sofia, Harbin, Riga, Dnepropetrovsk, Alma-Ata, and Aktau.

“Sotsium XXI veka” company
<http://www.sociym.ru/rus/productionsr.html>

VHG devices are used for autonomous heating and hot water supply for living, public and working areas.

VHG devices operate in modes of direct, automatic and remote control taking into

account temperatures of environment air inside and outside the area.

Efficiency of VHG-5 (coefficient of energy transformation – CET) = 1.6 ... 2.2. The payback is one heating season.

The warranty service is made during 1 year. The company sells licenses of production and sale including foreign ones.

Performance attributes and prices

VHG-#	Output, kW	Heat output, kcal	Weight, kg	Price, \$
1	5,5	12	40	2500
2	11	24	75	3500
3	15	33	110	4500
4	22	48	150	5200
5	37	80	220	6500
6	55	120	350	7500
7	75	180	400	10500
8	100	220	520	17000
9	150	330	710	27000
10	315	700	1250	52000
11	400	880	1550	84000
12	500	1100	1750	110000

The mains voltage is 380 V.

The electric engine’s revolutions are 2,900 rev/min.

The heat carrier’s temperature (water, antifreeze) is controlled: 35 - 95 °C.

*Prices are given with VAT.

“Sobbit” company
sobbit@nm.ru

“Sobbit” company has begun to develop a new activity, which is installation and service (warranty and post-warranty) of electric boiler-rooms using a vortex heatgenerator with a capacity of 3 – 75 kW and more.

Operation principle: a liquid-carrier is fed into a cavitation tube (the know-how) where it is spun up until a vortex is formed. During this, the vortex energy is extracted and liquid is heated. The liquid-carrier can be water or various antifreezes. The device is patented and has a certificate of conformance.

“TekhnoNEST” company
(4212) 33-94-21

The company is the only producer of heat devices in the Far East. The devices based on VORTEX HEATGENERATORS can be used for heating and hot water supply for living, public and working areas. Their output is from 2.8 kW and more, the coefficient of electric energy transformation into heat energy is up to 1.5.

“TekhnoNEST” company is carrying the design and installation of machinery and commissioning.

Phenomenon of electric current rotation in nonlinear electric system

Violation of the law of charge conservation in the system

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The description of an electrical nonlinear device, which reliably works with efficiency of more than 1, is given. For the first time, physical processes in a circuit, which lead to the formation of abnormally strong current at a limited section of the circuit, were experimentally registered. Due to them, the mode of superhigh efficiency occurs. It was supposed that a source of boosting charges forming overcurrent was a physical vacuum.

Search of new energy carriers is being developing all over the world. The reason is clear: the widely used organic fuel is coming to an end. Ecological problems are beginning to concern even staunch optimists not to mention pessimists.

Experiments conducted recently in different countries prove that this problem has a solution. It is a good sign that, for example, a few dozen of electrical and mechanical devices are known (patented) and operating with efficiency of more than 1. This effect is being explained by the suggestion that such devices (or circuits) interact under certain working conditions with an unknown and unused energy carrier and obtain extra output from it. Many authors think that this energy carrier is space-time, which contains (theoretically) enormous energy reserves. The suggestion is proved by a number of well-known experiments (Kazimir's effect, formation of the electron-positron couple etc.).

In this case, the following questions are urgent: which properties of the circuit or the operation mode can cause generation of extra energy? Which physical processes contribute to this?

The majority of devices and circuits with extra-high efficiency, which are known to the author, are rotating systems. Construction elements, liquids in useful capacities, electromagnetic fields in circuits rotate. Most likely this particular feature (rotation) can be considered as a key to energy storeroom of space-time.

However, it is known that rotation itself cannot cause any unexplained effects. But, for instance, during the experiments of N.A. Kozyrev on changing of weights of bodies [1], rotation was accompanied by irreversible physical processes. The result was positive.

In the given report, a phenomenon formed during the operation of electric rectifying circuit (irreversible process in the nonlinear circuit), **in case an element generating current rotation is included in its load**, is described. The element is passive and has no energy sources [2]. During operation with the element, from the point of view of a stranger, an obvious violation of the law of electric charge conservation happens in the circuit. The effect is the following: in case a sequential circuit of the rectifier is used, a pulse current appears in its sector (in the load circuit). It flows through the load and diodes and its quantity exceeds input current from the power supply (the circuit of 220V, 50 Hertz) by 1.5 – 2 times. If the rectifier's circuit is improved, it can exceed by 3 times and more. The overcurrent flows only along the closed internal circuit: load – diodes of rectifier bridge – element generating rotation (converter). Naturally, reasonable belief appears that overcurrents are caused by an unknown auxiliary charge source.

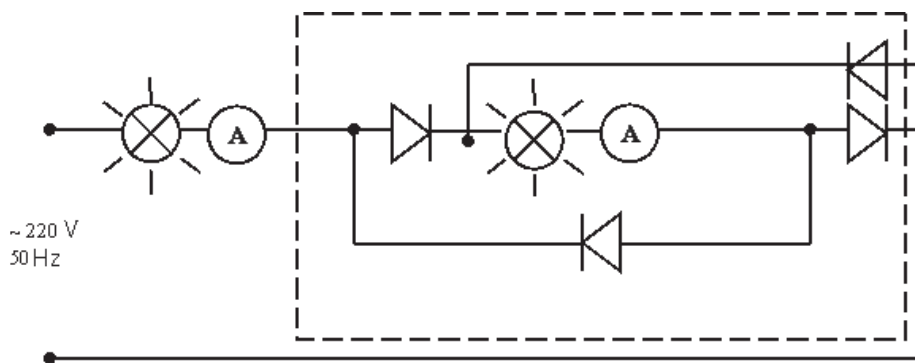


Fig. 1

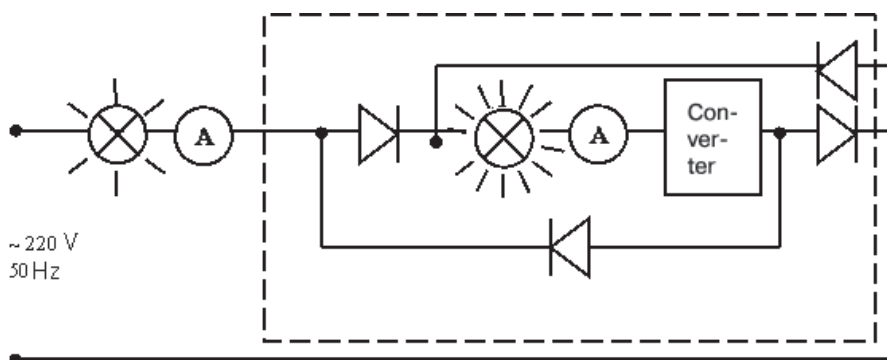


Fig. 2

This increase of current strength in a diagonal of the rectifier bridge leads to generation of output in the load of the experimental circuit, which exceeds enter output by 2 – 4 times. It is especially clear if incandescent lamps are used as output indicators. The circuit demonstrating this experiment is shown on Fig. 1 and 2.

Two identical lamps using ampere rating of 0.3 amperes were included in the circuit: one was located between the voltage source (network) and the rectifier and another was included in the load diagonal. Both lamps were included consecutively in relation to the voltage source and, therefore, without the converter (Fig. 1) and lit with the same brightness. During inclusion of the load consecutively with the converter's lamp (Fig. 2), an unusual effect occurs: converter is a passive element containing active resistance but an amperemeter included into the diagonal shows that, in spite of losses, current increases there and, accordingly, the lamp in the diagonal begins

to light much brighter. The lamp, which is included between the voltage source and the rectifier, does not react to the converter and lights with the same brightness. The amperemeter, measuring current through it, shows that current from the external voltage source does not change during inclusion of the converter.

The circuit works sufficiently stably during this operation mode. The above mentioned measurements were carried out hundreds of times and demonstrated an ideal recurrence.

During thorough investigation of the operation mode of this nonlinear "exotic" circuit, it was discovered that a free (proper) process occurs in the load diagonal of the rectifier. The reason of it is jumping of the pulse current's derivative in points of time when the current is equal to zero. As a result, the rectifying circuit plays a role of a peculiar generator of free processes and they regularly

occur in the load diagonal. Certainly, the current of free process exists in the load circuit (lamp – converter – diodes) besides current from the external generator.

It is necessary to mention that the current of free process has a reactive nature and does not use energy of the external generator.

We must also pay attention to the fact that free processes play a fundamentally important role in the operation of the known “exotic” circuits, such as Avramenko’s plug and Tesla’s resonance transformer.

It is important for us, however, that the occurrence of free processes in the circuit is caused by peculiarities of change of electromagnetic field’s energy, which is formed by reactive elements of the circuit [3] and, thus, change of the state of space-time adjoining the mentioned elements. Two experimental facts exist: change of electromagnetic field’s energy (change of space-time’s state) during the occurrence of free processes in the circuit and significant increase of current in this circuit accompanying occurrence of free processes. Comparing these facts, a supposition appears that the source of overcurrent, which is formed only due to the increase of quantity of elementary charges on the given circuit’s section (the seeming violation of the law of charge conservation is demonstrated

by this), is a local area of space-time where free process exists. It can be caused, for example, by occurrence of electron-positron couples due to vacuum deformation [4] in the given local area under the described conditions. Or, if we have another initial supposition, it is caused by the convergence of a unitron field, which probably leads to the same [5]. In any event, reasons of this phenomenon depend on real processes taking place in physical vacuum.

Obviously, the occurrence of overcurrent in the load circuit of the given circuit leads to the abnormal increase of its efficiency.

Further research and development directed at the increase of overcurrent in nonlinear systems could lead to the application of this method of extra electric energy generation to industrial power engineering.

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«Perpetual motion machine» in questions and answers or «again about magnetron»

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A year has passed since the day the article “How to correctly calculate efficiency of perpetual motion machines” was published (New Energy Technologies #2, 2004). There were a lot of comments about the article. They were full of surprise and misunderstanding of the effect. One of the main arguments of my opponents was the fact that a magnetron working in standard and very popular domestic microwave ovens does not demonstrate that it is “a perpetual motion machine”. A wattourmeter fixes a magnetron working in microwave ovens very well and shows this quickly rotating. This is right. Everything happens this way. At this point interesting and strange things, in the opponents’ opinion, begin. Why does not a magnetron in standard microwave ovens demonstrate that it is one of the oldest WORKING (from 1937) “perpetual motion machines” considered by official science?

In order to explain this, it is necessary to *remember* the of basic principles of a magnetron’s operation. It uses the motion of

electrons in the presence of two fields, magnetic and electric, which are *perpendicular* to each other. A magnetron is a two-electrode lamp or a diode containing an accumulative cathode and a cold anode located in the external magnetic field. It is necessary to mention that the anode (the anode block) of a magnetron has a complex solid design with a system of resonators. A magnetic field is created by a coil with current (an electromagnet) or by a permanent magnet (magnetron is placed between its poles).

If there is no magnetic field, electrons coming out the cathode practically without initial velocity move in the electric field along straight lines, which are perpendicular to the cathode, and come to the anode. If there is a magnetic field, the electrons’ trajectory is bent by Lorentz force. If the magnetic field is big enough, electrons’ trajectories do not cross anode surfaces. In this case, no electron reaches the anode. Trajectories of electrons’ motion are shown on Fig. 1. **The trajectory of an electron**

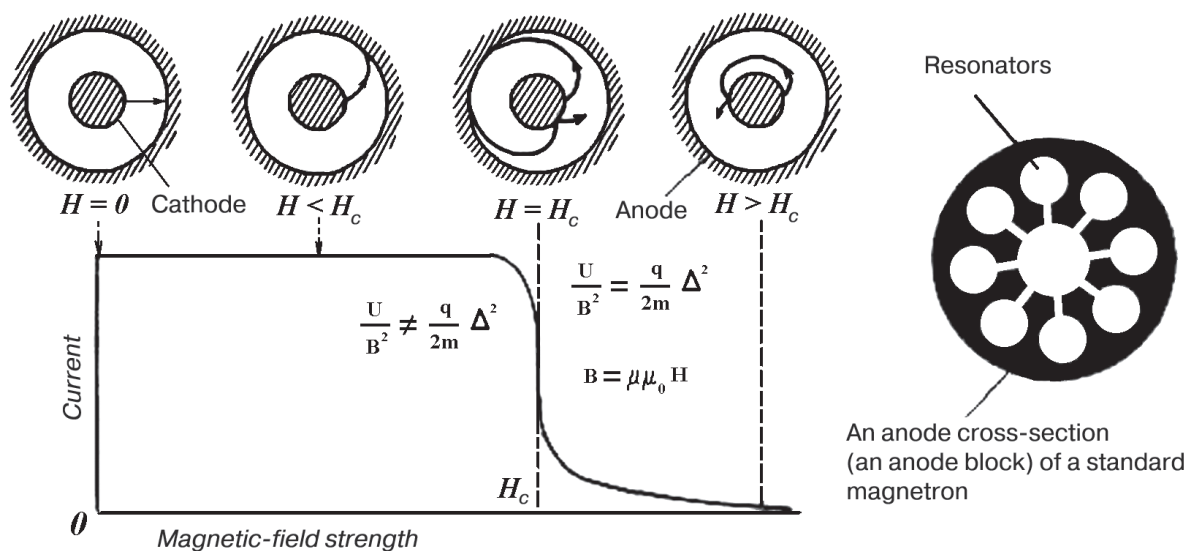


Fig. 1. Trajectories of electrons’ motion in magnetron

is a cycloid circumscribed by a point located at the circumference of a circle evenly moving along the cathode. During the motion of the cycloid, the electrons flow slots of the anode block's resonators, and strong electromagnetic microwave frequency oscillation occurs in them. High-frequency energy from the machine is usually led out by a loop or a coupling hole located in the outlying part of one of the anode block's resonators. We must mention that the magnetron was designed as a high-powered generator of electromagnetic microwave frequency oscillation. All stated above is just a very *short note* of complete magnetron theory including almost all electrophysics.

So, what did cause the misunderstanding and mistrust concerning the idea that a magnetron is a "perpetual motion machine"? A major misunderstanding was displayed by some "professionals" using a magnetron in radar stations. This refers to most people using standard microwave ovens. Under what conditions does a magnetron become "a perpetual motion machine"? It happens in case an equation $U / B^2 = q \cdot \Delta^2 / 2m$ is implemented. This equation is very important. It describes conditions when electrons coming out the cathode cannot reach the anode and, therefore, loop the circuit of the anode source. The process continues while Ohm's law does not work (the anode circuit is open). Most machines have magnetrons working in *pulse* mode. What does it mean? It means that anode voltage in a magnetron is pulse, has a certain period and changes from 0 to its maximal value and back. Pulse voltage in a standard microwave oven changes from 0 to 2,000-3,000 and back to 0. The frequency of pulses is 50 Hertz. Will the equation $U / B^2 = q \cdot \Delta^2 / 2m$ be implemented? No, it will not, except one (two) point during pulse.

Scheme of a magnetron switching on in a standard microwave oven is shown on Fig. 2. The *pulse* voltage of a high-voltage diode is led to the magnetron. What happens then? During the voltage pulse, an electronic-plasma cloud-rotor is formed in the magnetron and the high-voltage condenser is recharged. The circuit of the anode source is *looped* (transient) and Ohm's law works. The anode current in

standard *pulse* microwave ovens reaches 0.3-0.5 ampere. These pulse transients are well fixed by the watt-hourmeter.

What must be done in order to always implement the equation $U / B^2 = q \cdot \Delta^2 / 2m$? It is necessary to change the magnetron's operation mode into the mode of *continuous* generation. The anode must not have a pulse voltage, but permanent one of the value, which allows implementation of the equation $U / B^2 = q \cdot \Delta^2 / 2m$. In this case, the circuit of the anode source opens (no anode current) and Ohm's law stops working. This situation is very interesting. The anode source works idling and the microwave output is generated at the exit of the magnetron. As Ohm's law is working, the watt-hourmeter stops fixing the working and generating output (energy) magnetron. For example, in standard magnetrons with regular ring permanent magnets, which are used in microwave ovens, anode current (2-3 microampere) occurs during *permanent* (but not pulse) anode voltage of 60-65 volt. For anode voltage of this value, we cannot wait for a significant value of "excessive" energy. This anode current (2-3 microampere) must occur during anode voltage of hundreds and thousands of volts. In the event of this, the output will be hundreds or more watts. Permanent magnets must form a big magnetic field. The electric field must be formed by an external source, which works idly. Thus, this is a "*perpetual motion machine*"!

So, everything is simple but not too much. We must warn readers against an amateur understanding of the existent processes. The electronic-plasma cloud-rotor between the cathode and the anode disperses with difficulty after the anode voltage source is turned off. What will happen in the electronic-plasma rotor of the magnetron after the anode voltage is turned off? This happens in the magnetron during operation in the pulse mode. Rather significant changes will take place in electronic-plasma rotor. Which changes exactly? We suggest that readers remember or study "Theory of motion of charged particles in electromagnetic fields". We remind once more that the equation (working point) $U / B^2 = q \cdot \Delta^2 / 2m$ is very serious for the function-characteristic (Fig. 1) of a magnetron.

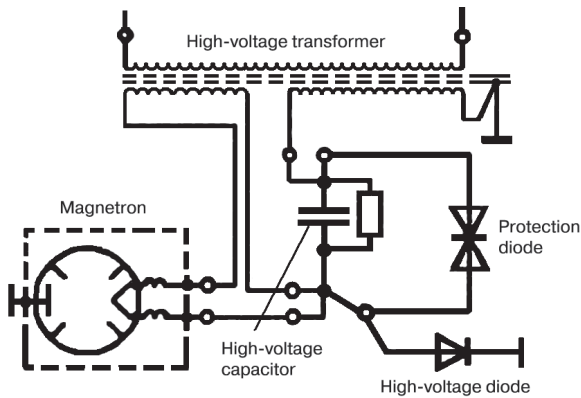


Fig. 2. Scheme of a magnetron switching on in a standard microwave oven

This very point of the function is an insuperable barrier in their consciousness, which does not allow understanding that the magnetron does not obey Ohm's law ("perpetual motion machine"). Lectures and practical training concerning the magnetron at technical universities often strengthen this barrier. For instance, there is a wonderful laboratory training #9 called "Research on magnetron generator's operation" at Saint-Petersburg State University, in the radiophysics department. During this training, magnetron works in the pulse mode. In order to obtain (change) the necessary parameters, the anode current of the magnetron is set (changed). Accordingly, the magnetic field is changed either. Everything works well and causes no questions. As we can see, voluntarily or not, the laboratory training is emphasized at the operation mode in the position to the left of the point of the equation $U / B^2 = q \cdot \Delta^2 / 2m$. It is not shown during the training that location to the right of this point of the equation in the continuous generation mode is possible too. The location to the right of this point will lead to a completely different laboratory training concerning research of the magnetron as "a perpetual motion machine". Only this example is enough to understand which gap in the consciousness of technical specialists was set by the equation (point) $U / B^2 = q \cdot \Delta^2 / 2m$.

Most scientific authorities feel anger regarding the concept of the "perpetual motion machine" and consider it pseudo-scientific. What does it mean? It means that they do not have thorough knowledge of magnetron's abilities themselves.

Since 1937, the third generation of technicians uses magnetrons keeping in mind this "pseudo-scientific" situation. We must compare a magnetron with another "perpetual motion machine", which is Searl's generator working since 1946. An electron moving cyclidly is an elementary magnet as a coil-loop with a current or a magnetic roller of Searl's generator. Magnetic rollers of Searl's generator have too much dead weight concerning mass and HWD. This makes Searl's generators (mechanical magnetrons) too big and heavy. A magnetron has no dead weight in the form of heavy and big molecules of magnetic material because it works using only electrons. It is convenient and profitable. The equation (point) $U / B^2 = q \cdot \Delta^2 / 2m$ is indirectly connected with Serl's generator. The electron, moving cyclidly in magnetron, is a magnet and, therefore, must not break this equation. Magnets (rollers) of Searl's generator must obey the same electromagnetic equation. It is impossible to make miniature «pocket-sized» Searl's generators using present-day magnets so as to obey this structural equation.

In practice, a magnetron as a "perpetual motion machine" cannot always generate much microwave energy. In the event of this, it is not necessary to lead it out of a magnetron. So, what can we get from a magnetron? This is an interesting turn. Practically every magnetron needs *forced* air or water cooling of the anode block. This shows that a great quantity of heat is generated on the anode block. What prevents us from using this heat for daily needs? Absence of such magnetron electric heaters prevents us from that. What will happen if such an electric heater is switched on? The network system will work idly and the wattourmeter will not rotate. This is only one of the possibilities to use a magnetron in the continuous mode ("perpetual motion machine") as an electric heater neutralizing the wattourmeter.

In conclusion, I would like to ask all readers: "Will such magnetron electric heaters appear in the market and when?" Who is able to answer this question?

The author is looking for investors and business partners in order to develop experiments in this field.

DETECTION OF REMOTE INFLUENCE OF ROTATION ON RADIOACTIVE DECAY

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1.Introduction

Numerous experimental researches of remote influence of rotating objects on statistical indications of gamma-radiation intensity of radioactive sources in a circuit spectrum displayed certain regularities of influence on an excited nucleus and semi-conductor spectrometry [1, 2].

It was discovered that, during a comparative analysis of the statistical results of two measurement modes (a non-rotating and rotating ones), the following regularities are displayed: first, during the rotating mode (in relation to the static mode), indications of gamma-radiation intensity decrease; second, readings of gamma-quanta energy (pulse amplitude) change to increase as well as to decrease; third, a form of statistical distributions can widen and become multiple.

The listed effects allow fixing the presence of some factors of influence both on the radioactive source and the registration equipment, connected with rotation.

The rotation source was an electric motor with various nozzles at the shaft. The rotation of the electric motor forms a multi-component physical field in the environment, which influences the statistical distribution of a circuit spectrum of gamma-radiation.

Due to this, it was necessary to conduct a better experiment, which allows the division of the influence of the investigated field's component and showing influence on an excited nucleus.

At the same time, it does not influence the semi-conductor detector (SCD). The rotation influence on the radioactive isotope and measurement of the aftereffect were spatially divided.

2.Description of the experiment

Experimental research in order to discover the influence of the field generated by rotation on SCD has determined the following regularity: the value of the statistical distribution's displacement is directly connected with the time of the detector's charges collection.

During the rotation mode, collection time decreases according to the static measurement mode [3]. It was also noticed that, during long-term measurement during the rotation mode (several hours) and turning then into the static mode, the peak's distribution during the static mode after the rotation one changes insignificantly towards a decrease according to the initial measurements (before rotation).

Correspondingly, the effect of the accumulation and memory in the environment of influence on the excited nucleus and detector is displayed. In order to experimentally divide degrees of the aftereffect influence on the detector and the isotope a month after the last turning on of the rotation mode, the following experiment was carried out. First, 60 measurements of the peaks' square of the studied isotopes' (Cs^{137} , Co^{60}) gamma-quanta without any rotating objects were implemented. Standard sources of gamma-radiation were used.

Then, within ~50 meters, in another room, influence on the studied source was carried out for 30 minutes. A generator of the influence field was a steel disc of 90 cm diameter and 5 mm thickness attached to the electric motor's shaft. A shaft's pivot pin was directed vertically according to the Earth's surface. The motor of 250 W power was attached to the post. Its shaft rotated with

angular velocity of 6,000 rev/min clockwise (view from above); the disc was located above the radioactive isotope source strictly along the pivot pin for the experimentally determined distance from the source. After the motor had been switched off, the proper measurements were carried out in the first room. The geometry was the same.

A semiconductor detector, a preamplifier, an amplifier, and an analyzer were used as measurement equipment. The square of full absorption peak (the peak), which was proportional to the quantity of registered gamma-quanta, and the main point of the peak (pulse amplitude), which was proportional to photon energy, from different sources of radioactive emanation were measured.

Data on the analyzed spectrum was processed by "Search" program developed in Dubna. The width of the energy resolution of the analyzed peak did not exceed 3 kilo-electron-volt (keV). During a measuring hour, shift of the peak's main point towards an increase or decrease did not exceed 0.5 keV.

At the following stage of the research, it was necessary to register the change of the radioactive isotope's half-value period during the remote influence of the rotating object.

One of the optimal radioactive sources for this method can be an isotope Au^{198} with a half-value period $T_{1/2}=64.7$ hours and a gamma-line energy of 411 keV. The studied samples with certain gold content were prepared using the saline $Au[HC l_4]2H_2O$. The dried saline had been packed up in aluminum foil and irradiated at Tomsk research nuclear reactor IRT-T. Two samples were prepared (~ 0.25 cm²); one of them was a reference sample (#1) while the second one (#2) was influenced by anticlockwise rotation according to the above described method. In all, the period of the measurement of both samples was 270 hours: from 10th to 21st of May 2004. Total period of influence on the second sample did not exceed 32 hours during the time of the experiment.

In all, 37 measurement cycles of each sample were carried out while one cycle consisted of

30 measurements of each sample, which lasted from 20 to 95 seconds. The measurement time was determined so that the peak's square was not less than 800 pulses. On the 10th and 11th of May, 27 measurement cycles were carried out and then, from the 17th of May, the other 10 cycles were carried out.

The reference sample was not influenced; it was located in the room with the registering equipment all the time. At the moment of the reference sample's measurement, the influence on the second one continued. The measurement geometry was the same; even the angle across was kept the same using marks.

During the experiment's implementation, the measurements' quality control was carried out during each spectrum collection. Quality was assessed by the following parameters: first, during significant voltage changing or occurrence of leakage currents (due to humidity increase etc.) the peak's width increased, i.e. energy resolution increased.

Accordingly, accuracy of the peak's square determination became noticeably worse. Such factors as change of water and voltage did not influence the peak's square. The influence was possible only if a shift of a few units (keV) existed during spectrum collection.

Second, due to the fact that the peak is a Gaussian, it is characterized by the main point (the first derivative of function, the approximating peak, turns into zero), i.e. location at the energy scale. During each measurement, the main point of the peak was registered. Analysis of statistical results was carried out with a credibility value of 95%.

3. Analysis of experimental results

Let's consider the obtained results of experiments carried out using long-lived isotopes. As it was mentioned above, if the field generated by rotation of material objects, which is not an electromagnetic component, exists, the sufficient influence force can appear and influence internal

structure of the excited nucleus. Due to this, the first measurements had been carried out before the influence of the rotating object while the second ones were carried out after that.

It is known that the peak's square is quantity of gamma-quanta of certain energy registered by SCD. In this case, this value characterizes the intensity of the excited nucleus' decay. Analysis of results has shown that the average value of the peak's square for Cs¹³⁷ decreases during the second measurement in comparison with the first one.

A statistical factor analysis of the obtained data was also carried out. This allows comparing samplings of the statistical results of both measurements. A factor analysis (Fisher-criteria) and a test "for average" have shown that two samplings are different, i.e. they are not identical objects.

During the measurement of Co⁶⁰, two peaks of different energies (1,332 keV and 1,173 keV) were formed simultaneously on the screen of the analyzer (amplitude spectrum). An amazing result was obtained: for photon energy of 1,332 keV, during the second measurement, the peak's square decreases in comparison with the first measurement. Factor analysis has also shown a difference of the two samplings while there was no change in photon energy of 1,173 keV.

Thus, the aftereffect of rotating objects influences the internal structure of the excited nucleus and this influence can be different for various states of an isomer.

If the field generated by the rotating object influences the internal structure of the nucleus, it is possible to detect a change of the decay "constant". For this purpose a β -active isotope Au¹⁹⁸ was chosen. In case there is no influence, the decay "constant" (theoretical) has a value of $\lambda=0.0107$. A statistical analysis of the obtained experimental results of the two samples (the reference sample and the second sample being under the influence) was carried out.

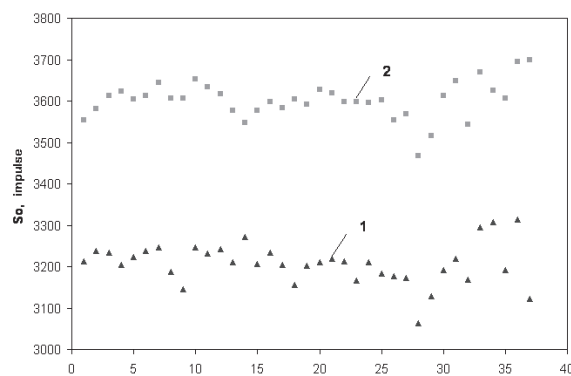


Fig. 1. Dependencies of average values of the peak's square standardized according to the decay exponent and number of measurement cycle, where 1 is the reference sample and 2 is the second sample

Then, the decay "constant" was determined. In both cases it was $\lambda=0.0109$. The first noticeable thing is that the decay "constant" differs from the theoretical value by 1.8%, i.e. a half-value period of the gold isotope is **63.5** for each sample.

Due to the fact that the curve of the reference sample differs from the theoretical curve, The Pearson coefficient was calculated for the last ten measurement cycles. The Pearson coefficient was an agreement on the fit during comparison of the experimental and theoretical curves; it has proved their difference.

Identical values of decay "constant" of the two samples can show the presence of a correlation of the gamma-radiation's intensity. After the regulation was carried out according to the decay exponent, a correlation analysis of the peak's square samplings between the two samples was implemented. It has shown that the longer influence on the second sample and the more change of the intensity of the reference sample coincides with change of the intensity of the second sample (Fig. 1).

Fisher's variance analysis shows that the time factor significantly influences the average statistical data, *i.e. the period of influence and point of intensity measurement time are important.*

Then, we will consider the distribution of the dispersion of the peak's square sample values. In this case, dispersion characterizes the deviation scope of decay intensity and, therefore, decay "constant" of the excited nucleus from its true, theoretical value.

Exponential value of the first sample's dispersion differs by 10.8% from the theoretical value while value difference of the second sample is less than 1%, i.e. it coincides with the true value. Thus, increase of probability dispersion of the gold isotope's decay is more likely connected with information dependence on the second sample, which is being exposed to influence at the moment.

According to the method of experimental research, the studied isotopes can be considered to be point radioactive sources. The research has shown that influence of remote rotation on radioactive decay of the sources in different points of space is different. That's why, in order to increase effects connected with rotation, it is necessary to select an optimal location of the emanation sources.

4. Discussion of the results

The implemented experiments have displayed three new effects connected with the influence of rotating objects on radioactive nuclei decay. First, the decrease of a half-value period of an excited nucleus; second, the correlation of independent measurements occurs (it can be connected with effect of quantum (microscopical) nonlocal property); and third, the more time of influence on the second sample and time of measurement of the reference sample, the less statistical deviation from the average value of photon intensity of the reference sample.

The effect of a microscopical nonlocal property is displayed as a violation of Bell's inequalities during research of Einshtein-Podolsky-Rozen's paradox (EPR) [4]. The main point of the effect is the following: during spin interaction of quantum systems and their subsequent division for a macro distance, information connection is left between them.

Thus, the change of a spin of one system causes an instantaneous change of a spin of another independently of the distance between them. If we consider the nuclei of a gold isotope as quantum systems, which had the spin interaction at an atom-nuclear level in the saline, correlation of nuclear decay of the two spatially divided samples is inevitable if one of them is exposed to influence.

A rotating macro object is a source of disturbance of the physical vacuum environment while a vacuum is subjected to the cross spin polarization [5]. As a result, the spin influence on the internal state of the excited nucleus is possible and, therefore, the change of its parameters can lead to a change of a decay "constant".

Most likely, the process of influence through spin states of excited nuclei of the second sample's isomers and their nonlocal connection with nuclei of the first sample lead to the mentioned effects. In this case, decrease of statistical dispersion of gamma-radiation intensity of the reference sample must be a consequence of the fact that, at the moment of its measurement, spin-torsion influence on the second sample is carried out. The measurement of the second sample is the investigation of aftereffect.

The author expresses his thanks to A.F. Sudyko for active participation in the experiment implementation.

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Aether mechanics

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Aether is a material medium filling all world space including that which we live in.

Aether is a real gas, which has particles called "amers". They are very distant from each other in comparison with their size, like stars in the sky. However, "amers" have very high density, so high that the average density of aether exceeds the density of any metal by many times. I gave the basis of this in the article called "Air and aether as sources of living force" and also in other articles. The basis resulted from an analysis of nature of centrifugal force from an aether standpoint.

Aether engines

An aether engine is implied as a mechanical system, which is able to obtain energy from aether fields.

On Fig. 1, a swinging device with leaden loads is shown. It can swing for some days after a light push. We used loads up to 75 kg each.

We have made swinging devices with loads of the same form but different weight.

Heavy loads swung with less resistance than light ones. Loads obtained energy from aether

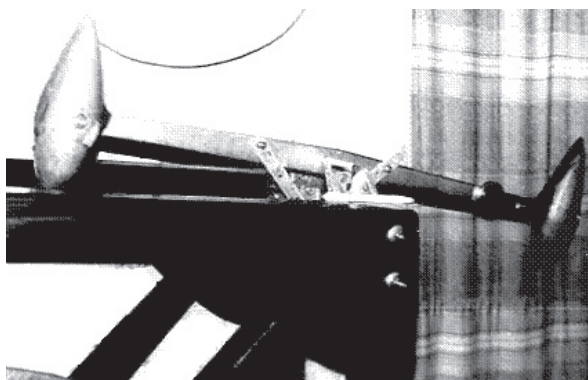


Fig. 1. Swinging device with loads

due to the change of attraction to the Earth in different moments and in various ways. In some cases, swinging amplitude increased.

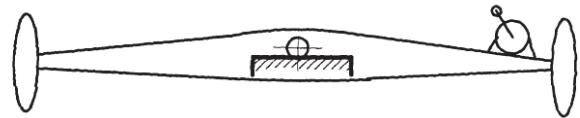


Fig. 2. Swinging device with loads and vibrator

On Fig. 2, a design of the swinging device is shown. A small electric motor of 4 volts (it worked using battery) was taken from a toy and installed at the bar near one of the loads. A leaf with an eccentric load of 3 grams was fixed at the motor's axis. During vibrations made by this motor, the entire system of 160 kg swung in vertical plane with acceleration or without damping. Friction, air and hunting do not have acceleration influence in this case.

When using other, more flexible bars with more powerful vibrators (an electric fret-saw), the amplitude increased by 15 cm during one bar's swing.

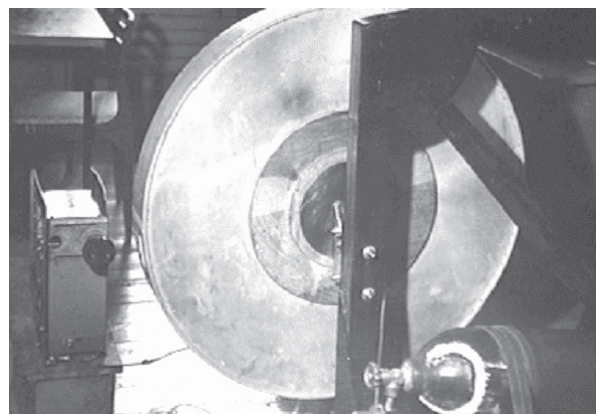


Fig. 3. "Mikhaylo" device: a disc is rotating in a housing with a helium medium



Fig. 4. "Novogodniy" aether engine

We also tested various discs. "Mikhaylo" device is shown on Fig. 3.

A disc weighing 300 kg is put in a waterproof housing. After the disc had been turned by a starter, the housing was filled with helium (its viscosity is less than air viscosity). During this process, the disc was rotating (with speed of 3 rev/sec) with so small resistance that its full resistance was 2 times less than friction drag in a bearing.

During another experiment, the same disc, though without the housing, could rotate continuously for any amount of time and also increase speed up to 1 rev/sec if friction in the bearing had been artificially made equal to zero. The disc can be seen on Fig. 4 (the horizontal disc).

A vertical disc with diameter of 1 meter is rigid at the horizontal shaft of this device. A figured cam is rigid at the same shaft. The shaft and the disc rotates in relation to pintle (in the center of the round table) and in relation to their long axis, i.e. the disc can circle leaning on the cam. Due to cam's profile, motion is happening with acceleration and braking. During direct motion, the value of acceleration speeding-up is more than value of braking speeding-up. Due to different change of inertial mass, the disc obtains an unbalanced accompanying impulse of inertia during direct motion and retro burn during backward motion.

The difference of motion characteristics in one side or another allowed to determine work made by the change of body forces under aether influence. Gravity participates in the disc's operation, too. So, it is a mass-gravity aether engine.

Light discs (made of foam plastic, wood) were also tested. Under other equal conditions they were rotating with higher resistance though they had much less resistance in bearings.

Discs with diameter from 0.125 to 1 meter were used. While diameter increases, total specific resistance of the disc highly diminishes. It is advisable to make a disc of a bigger diameter (2 meters and more). It can rotate without helium and under normal friction.

This will be a perpetual motion aether machine like planets.

Aether movers (inertia devices)

We imply that mover is a mechanism, which can be used for pushing off and movement in space (for example, wheel, screw propeller, flapping wing etc.). In the given case, we will discuss a



Fig. 5. Inertia device "Radj"



Fig. 6. Testing of “Radj” inertia device on water

mechanism, which can be used for pushing off from aether. **The physical meaning of the mover-inertia device lies in the change of inertia mass of the body under aether influence** depending on kinematic motion parameters (speed, acceleration and its derivatives: speed of acceleration, acceleration of acceleration etc.).

Many attempts have been made to build an inertia device using inertia. However, their theoretical bases had no convincing physical foundation: they had to push off from a vacuum given to us by Newton. Besides, experience of enthusiasts is greatly important in this case as it gives information about the creation of a theory of such movers.

The physical meaning of inertia is aether resistance to body acceleration. This resistance is equal to the product of inertia mass of body and its acceleration; it is directed against acceleration.

The influence of speed on inertia mass is observed during swinging of very long pendulums with relatively small amplitude when acceleration is small and its influence is much less than the influence of speed. As an example, the reader can take Foucault's pendulum.

In 1931, in Petersburg, in St. Isaac's Cathedral, a pendulum with a length of 98 meters and a swing time of 19.8 sec with amplitude of ± 5 meters was installed (unfortunately, today this

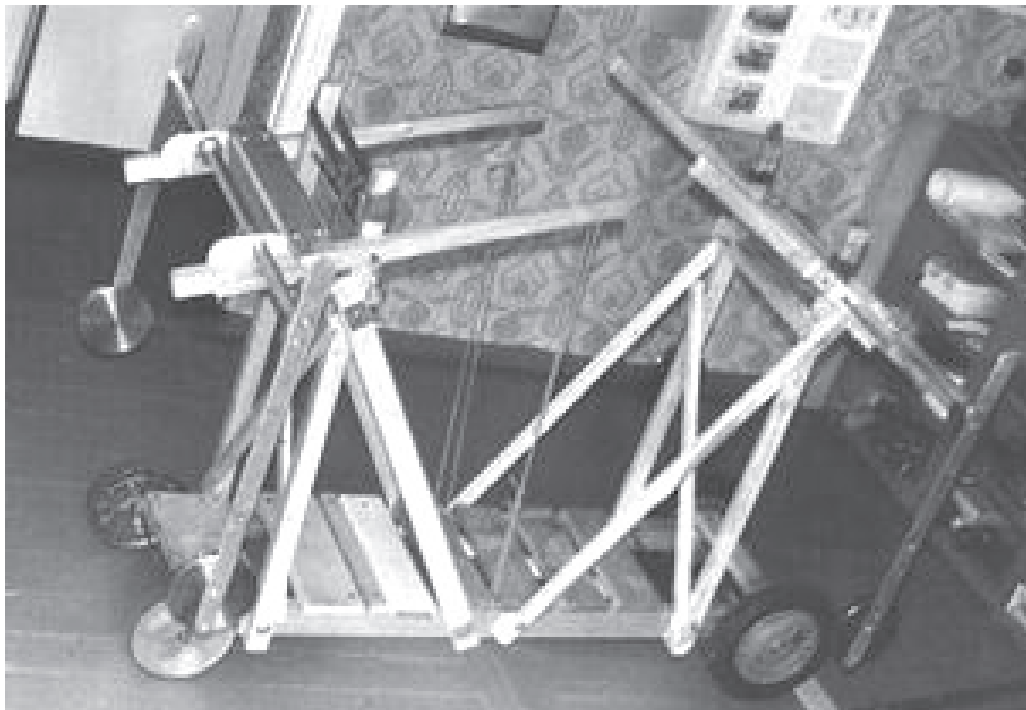


Fig. 7. “Radj-2” mover

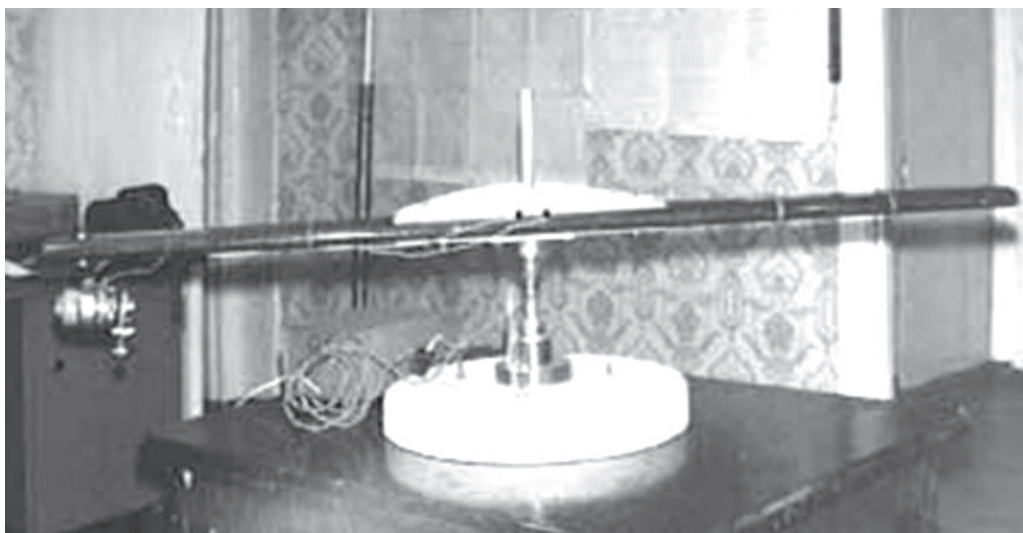


Fig. 8. “Karteziy” inertia device with small loads at the left end of the shaft; supply voltage is 12 volts.

remarkable pendulum has been taken away and stored in an archival depository of Cathedral museum). The calculation of swing time of this pendulum taking into account the mass of hanging line (about 10 kg) and the mass of the pendulum (54 kg) according to the formula for **physical** pendulum (known from school) gives a value of period equal to 19.5 sec. This lack of coincidence of 1.5 per cent corresponds to increase of inertia mass by 3%.

We would like to ask readers from Saint Petersburg to define more exactly the length of the pendulum from the point of suspension to floor of the cathedral. Perhaps, there are people (astronomers, physicians, amateurs) who measured the pendulum some way.

In Paris, in the Pantheon building, a pendulum with a length of 67 meters, mass of 28 kg and swing period of 16.4 sec has been installed. In this case, an increase of swing period (and pendulum mass) in comparison with the calculated value is observed.

We are very interested in the value of the swing period of this pendulum (and others) with small amplitudes (less than ± 0.3 meters) and thickness of hanging wire. We would like to ask people who are in Paris to carry out these measurements and let us know. We will be grateful for any data on these and other pendulums installed in other cities.

On Fig. 5, “Radj” mover is shown. Its loads are put in action using muscular energies. It allows moving by a small cart even upward with a light slope. Later we installed it on a raft and the raft began to move (Fig. 6). I have furrowed the whole lake by it.

“Radj” traction on earth (floor, asphalt) was 1.6 kg (according to dynamometer, according to acceleration speeding-up) with wheels’ resistance of 1.7 kg. It would take force of 3.3 kg to reach the same acceleration by outer traction. Moving downhill, we obtained nonstop motion producing a front traction as well as a backward one of about 1 kg. When using the raft on water, traction was less: 0.4 kg. It is advisable to let the inertia device installed on the raft move coasting-backlash back and forth, for example, put it on wheels and fix by a rubber band from behind.

Traction of “Radj-2” (Fig. 7) was inessential: motion of the inertia device’s body and two people were lacking in the event of the loads (right and left) moving with a phase shift by half-period. In the event of no phase shift, this binary mover did not fundamentally differ from “Radj” and developed two times more traction than “Radj”.

On Fig. 8, “Karteziy” mover is shown, which works using an electric motor of 12 volts. The mover is located to the left end of the bar.

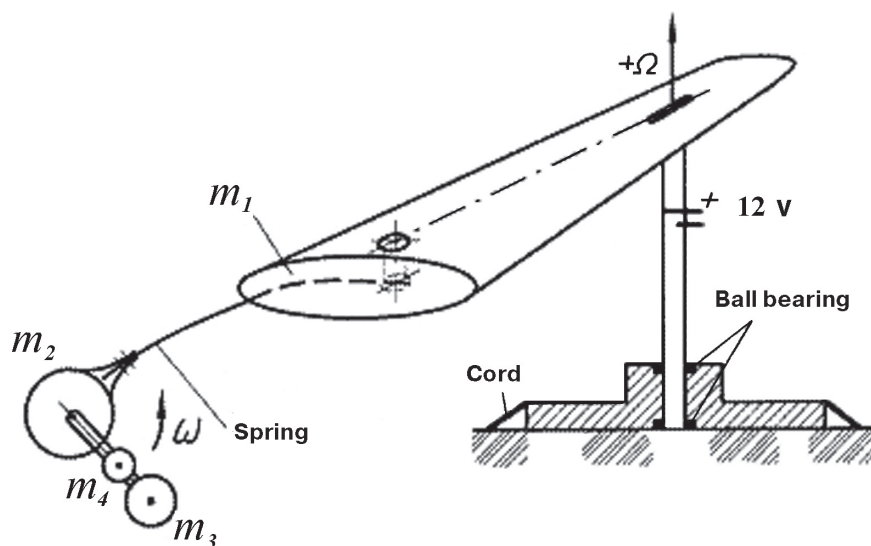


Fig. 9. Design of “Karteziy” inertia device

During operation, this aether mover produced tractive force of 18 grams and accelerated the bar up to a speed of 1 revolution per 2 seconds.

Design of “Karteziy” inertia device is shown on Fig. 9. The electric engine m_2 is hung on the bar m_1 through a steel spring. The bar can rotate on pintle. A leaf is fixed on the engine’s axis; loads m_3 and m_4 are located on the leaf at different distances from the axis.

During operation, the bar rotated for some period of time, picked up speed and, after electric current switching, turned in some circles mechanically. Motion of the bar is nonstop, i.e. friction in a bearing of pintle is always directed against motion and cannot produce propulsive burn in any way.

Windage cannot produce traction either because the highest speed of the leaf (at the bottom) is directed against the motion of the bar.

The motion of bodies is rather peculiar. The bar, for example, can produce only vertical motions while traction of the mover is maximal and equal to 18 grams.

The distribution of loads m_3 and m_4 at the leaf and their value and correlation plays an

important role and can change the direction of tractive force to opposite direction.

Then, we attached the engine directly to the bar (to this one and another, which was longer and more flexible) without the spring. The bar could move up and down again but did not move left-right at all (during rotation of the leaf) neither obeying the centre of inertia’s motion theorem nor the law of impulse conservation.

During this, the tractive force and speed of the bar’s end motion up to 2 m/sec was obtained (using a longer bar) in horizontal plane as well as in vertical plane. The engine rotated with a speed of about 20 Hertz. During each experiment, a certain speed corresponding with the distribution of loads on the leaf was required.

Movers hanging on a textile line were tested, resulting in a stable twisting of thread.

Now we are developing aether movers without vibration.

Another testing stage of aether movers is necessary: in space. Due to solar energy, such a mover can produce traction for any period of time. It is clean, simple, and convenient.

If it will be found that traction force does not decrease in space in comparison with traction on earth, the mover can be used as a transformer of solar energy to kinetic energy of spacecraft with efficiency more than one.

After aether energy stations (engines) are developed, the mover can be put in action by them. Motor devices of aircrafts, submersible crafts and others can become fully autonomous.

As we work, the traction of movers grows.

Conclusion

Modern aircrafts and modern energy, with the small exception, pollute and infect the Earth's biosphere.

The main energy carriers have limited reserves; they are a reason of wars and crises.

The development of flapping wings and aether engines can contribute to solution of these problems.

Joint operations of all people interested in this topic including students, teachers, scientific organizers, artists... and inventors are necessary. We would like to mention that Peter the Great personally worked at the problem of the perpetual motion machine. His correspondence with a famous German inventor Orphireus remains!

You can know more details about our work at the subject of aether here:
<http://www.maholet.aero.ru>.

News from USA

2005 Notice of Funds Availability

Renewable Energy Systems and Energy Efficiency Improvements Grant, Guaranteed Loan, and Direct Loan Program. Notice of Funds Availability (NOFA) Inviting Applications for the Renewable Energy Systems and Energy Efficiency Improvements Grant Program

DATE ISSUED: March 28, 2005

AGENCY: Rural Development, USDA.

SUMMARY: Rural Development announces the availability of up to \$22.8 million in competitive grant funds for fiscal year (FY) 2005 to purchase renewable energy systems and make energy improvements for agricultural producers and rural small businesses. Of the \$22.8 million, \$11.4 million will be set aside through August 31, 2005, for guaranteed loans.

These funds will be administered under a final rule to be published in the Federal Register later this fiscal year. Any guaranteed loan funds not obligated by August 31, 2005, will be made available for competitive grants under this notice. In order to be eligible for grant funds, the agricultural producer or rural small business must demonstrate financial need. The grant request must not exceed 25 percent of the eligible project costs.

DATES: Applications must be completed and submitted to the appropriate United States Department of Agriculture (USDA) State Rural Development Office postmarked no later than 90 days after the date of the published notice. Applications postmarked after that date will be returned to the Applicant with no action.

More information at

<http://www.rurdev.usda.gov/rbs/farmbill/2005NOFA/nofa05navigate.htm>

On basics of potential dynamics

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We conceive it as usual and matter-of-fact that similar things of everyday life can be shown by different means (prose, music, ballet, painting etc.) and forget that particularly physical processes can also be described (researched) by different methods and means. Authors choose the corresponding tool of description according to the authors' skill (and even art) to use these tools and the possibility to translate the results into a common language. Particularly, there is a statement in quantum mechanics that it is impossible to describe quantum effects in the context of the classical geometrical images [10]. This erroneous opinion is transferred from one manual of physics to another due to the fact that originators of quantum physics were high-class mathematicians, but they did not have the ability to think creatively. We do not consider creative thinking as just mental designing of geometrical objects and observation of their interactions. The most important thing in creative thinking is the ability of a person to turn (to be plunged) oneself into a physical process, to become this process mentally, to feel it inside and outside. This ability allows quickly finding solutions where the mathematician is useless.

During the last decade, a number of new effects with entirely unusual physical developments have become known including, for example, electrohydraulic effects remarkable because "excessive" energy is generated in the vortical environment while, during electropulse influence, new elements and "unknown radiation of a new type" occur. In E. Podkletnov's experiments with a quickly rotating superconductive disc, a possibility is shown to change the gravity field. G.I. Shipov and A.E. Akimov demonstrated the transmission of information signals without time delay. B.V. Bolotov has developed "The table of chemical elements of the second generation" and new methods to get them (www.bolotov.com.ua).

It is possible to give more examples of effects, which are beyond the limits of traditional physics, while specialists from the USA obstinately develop a regular global project of finding gravity waves within the limits of general relativity (GR). The authors of such projects either did not understand yet that irreversible reorganization of fundamental ideas of the physical world's system has already began in people's minds or the fertile field of GR is still profitable pork for its supporters.

I suppose that no gravity waves can be discovered within the limits of GR. This theory describes physical processes from within these processes. Their common fundamental nature is supporting interaction. What are gravity waves? They are waves of oscillation (shift) of a local center of masses of the universe. The center of masses, however, always stays static during supporting interaction. The center of masses of the local part of the universe (as a physical body) can be moved only by unsupported interaction and, therefore, gravity wave will be created.

During supporting interaction, a force can be generated only by two methods: dynamical and

potential. By analogy with them, during unsupported interaction, the generation of dynamical and potential methods of forces' is also possible. An accelerative mover of Linevitch-Ezhov [9] is a particular example of a dynamical method (for details see www.linevitch.narod.ru). An example of a potential method is a rotor horizontally rotating in a gravity field [3]. The value of antigravity (this term means force of inertia (or its component) directed oppositely to the force of weight) is very small for a single rotor. Moreover, it is decreased by a number of factors. In a multi-rotor system, however, under certain conditions, the antigravity value increases according to a non-linear dependency. **The unusual effects occurred in the experiments of E. Podkletnov, G. Shipov – A. Akimov, which were recently found out, can be actually considered as various appearances of interaction of matter with gravity waves, which appear during the change of the physical state of multi-rotor systems** (i.e. a potential system consisting, particularly, of atoms and molecules with spins oriented in gravity field). The possibility to increase the anti-gravity effect by a potential method was described in a report called "Geometrical basics of the Hayasaka-Takeuchi experiment with rotating rotors" [1]. The author presented the report at a scientific conference in Petrozavodsk in 1993. The report remains little known to the majority of specialists, however, we believe that, despite past years, its urgency has even increased.

Let's imagine a physical point moving from its initial state in two orthogonal directions simultaneously, with constant speed. In the event of registering a traversed path in equal time periods, we obtain rectangles with uniformly accelerated squares while a role of acceleration is played by the speed squared. Due to this, it is logical to call it square acceleration. The rectangle obtained by this method imitates gravity surface while square acceleration shows speed of its square's change.

If we multiply square acceleration by the distance to gravity center, we will obtain cubic acceleration, which shows the speed of change of the gravity volume, which is limited by gravity surface. In astrophysics, this value is

called a centric constant. It is a mathematical constant, and we have showed its physical meaning.

If the center of physical body's masses is moved in such a way that its square acceleration is square acceleration of a gravity surface, the body will hang in the air (will levitate). An attempt to move it away from the gravity center will lead to the appearance of a thrust aiming at bringing it back. An attempt to bring it near the gravity center will lead to appearance of a repulsive force aiming at bringing it back. Transfer of the body from one gravity surface to another is possible only if a self-resonant frequency of the body is changed (i.e. the frequency of the linear oscillator in the event of linear-oscillatory motion of the body, and the rotor speed in case of the rotating rotor). We will call this state of the body in a gravity field a steady state [3], and this state is submitted to another condition, which consists of quantized frequencies and radii. As applied to the rotor, its own speed must be by an integer more than self-resonant frequency of gravity surface, where it is located (and which coincides with its own first circular velocity), and its radius of gyration must be by an integer less than the mentioned surface.

Self-energy of a rotor's rotation is quantized too. It can exceed energy, which is necessary for location at the given surface. In this case the own pivot pin of the rotor must be an angle with a horizontal line not equal to 90°. Possible orientation angles will be quantized, too, and the change of the orientation angle will lead to displacement (transition) of the rotor to the according level. Time asymmetry can be observed during this process: the time of transition to upper level is less than the return to the lower. Only a certain, minimal quantity of rotors with the corresponding set of parameters, such as radius, self-speed, self-energy, moment, orientation angle, and direction of rotation, can be located at each gravity surface in a static state. Self-speed of the rotor and its self-energy in the physical meaning coincide with quiescent frequency or quiescent energy of particle in quantum mechanics. Rotor's transition into a static state means the appearance of its inert duplicate (a copy) [4]. The process is the following.

$f \times 10^3 \text{ min}^{-1}$			3	4	5	6	7	8	9	10	11	12	13
$\Delta \bar{G}$ milligram	1	exp	2.6	3.6	4.4	5.3	6.3	7.2	8.1	9.1	10.0	10.9	11.9
		theor	2.70	3.60	4.49	5.39	6.29	7.19	8.09	8.99	9.89	10.78	11.68
	2	exp	1.8	2.4	3.0	3.6	4.1	4.6	5.3	5.8	6.5	7.1	7.7
		theor	1.76	2.35	2.93	3.52	4.10	4.69	5.28	5.86	6.45	7.04	7.62

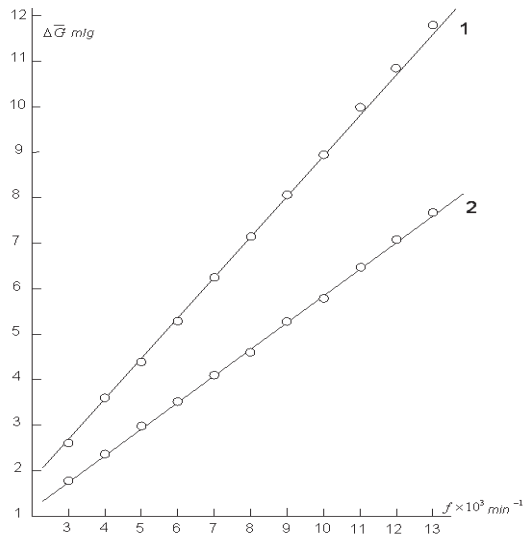


Fig. 1.
1 - rotor mass 175.504g,
inertia radius 2.26cm;
2 - rotor mass 139.863g,
inertia radius 1.85cm.
Lines are computation;
points are experiment

Let's suppose that a rotor's speed increases from zero to the first circular velocity during one revolution (this condition is not obligatory, an explanation is just more obvious this way). The inertial mass of each atom of the rotor was in the common center of masses Earth-rotor before rotation. During the process of starting the rotor, it is extracted from the common center of masses and transferred according to a trajectory in the form of a conic turn (moves along the side surface of the cone: from its top, which coincides with the common center of masses, towards the base, which is the rotor itself). In a static state, the rotor geometrically contains two numerically equal masses: gravity mass and inertial mass, which is dynamically symmetrical against the gravity one [4]. The resultant mass is equal to zero along the vertical pivot pin of the rotor and it is equal to the

gravity mass at the transversal. If the potential energy of the rotor is multiplied by the period of rotation around the gravity center (with the first circular velocity), we will obtain the constant P , which analogue in quantum mechanics is Planck's constant: $P = m \cdot V \cdot 2 \cdot R$, where m – mass of the rotor, V – tangential speed, R – surface radius [8].

Let's suppose that somehow the rotor, while in a static state, obtained additional speed, which is tangential to the surface. In this case, its movement will be a circular sinusoid not taking into account gyro-effects (it is circular relative to the gravity center). The more frequency of the sinusoid, the more its speed (and, accordingly, kinetic energy). Due to the tops of the sinusoid, the rotor will periodically be higher than its static gravity surface. In quantum mechanics, it coincides with the location of the electron outside the limits of the potential well with probability, not equal to zero. Due to the fact that the rotor is in a kinetic moment, gyro-effects will occur. One of their results will be a precession of a rotor's blade around the axis connecting its center with the gravity center.

All shown examples of the rotor's behavior are related to the case when the gravity surface (Earth) is not rotating. Things happen the following way on the rotating surface.

Being in the initial state, the rotor already rotates together with the globe around the gravity center because it is influenced by antigravity of daily rotation. In the event that angular velocity of the rotor's own rotation coincides with the Earth's one, the resulting speed related to the gravity center will be equal to their difference; in the event of counterrotation, the resulting speed will be equal to their sum. An obvious analogy of the

relative addition of speeds can be the parallel motion of trains with different speeds in the same and different directions.

During uni-directional motion of the globe and the rotor, weight of the rotor will not change until its linear speed exceeds the Earth's speed. On medium latitudes, all bodies have a diurnal speed of about 350 m/s. In order to overcome it, a standard aviation gyroscope (the author could experiment only with such gyroscopes) must be turned to a frequency up to 1,800 Hertz! It is much easier to obtain an antigravity effect by counterrotation of the rotor and Earth.

The gravitation intensity of the globe first increases proportionally to the distance to its center and, then, when the distance is more than R_0 (Earth's radius), it decreases proportionally by a square of the distance. The surface of the change of the gravity gradient's distance (SCGGD) does not mainly coincide with solid surface. In most cases, it is higher (due to the presence of an air atmosphere) and has complicated relief due to the fact that the deposition of earth's layers and their density is irregular. Moreover, SCGGD can lower itself to the Earth's solid surface in places of planetary breaks of the earth's crust.

In case the rotor is located lower than SCGGD, it means that it is located in the potential well (where intensity increases if height increases) and, independently of the direction of rotation, its weight will not change until the frequency of its spin exceeds the value of the well's depth. The standard gyroscope must increase spin by 30 Hertz for every 0.1 m/s^2 of the growth in intensity of gravity.

One of the consequences of the Hayasaka-Takeuchi experiment [2] is the direct confirmation of the fact that SCGGD lowers itself to a solid surface near the planetary break of the earth's crust (Japanese islands are located right along Pacific break). Another factor, which indirectly confirms this, is the longer life interval of the Japanese, in comparison with other countries. We suppose that the reason of this is not the use of seafood, as some specialists think. The point is that, during the decrease of gravity intensity, the speed (drift) of all

processes slows down (rest mass of matter particles decreases) and all living objects grow old slower [5]. The same effect is observed among population of some mountain regions: gravitation intensity is somewhat less there than on plains (inhabitants of mountain Caucasia and Tibet have longer average life interval than inhabitants of plains). The higher intensity, the quicker speed of all processes (rest mass of matter particles increases) and all living objects grow old faster. A cosmonaut at a height of 300 km is in the zone of gravity intensity equal to $g = 9.3 \text{ m/s}^2$. If he spends there, for example, 60 years, after returning he will look much younger than his coevals, who stayed on Earth.

The author obtained a formula to assess the change of bodies' weight (rotating or oscillating at horizontal plane) [1]. According to it, a calculation and comparison with experimental results for two rotors were carried out. The figure attached illustrates the high accuracy of the calculation coincidence with the experimental data.

Besides the above mentioned parameters, its pivotal length influences on the rotor's antigravity. In the work [1] a result of numerical computation of atmospheric spout's height is given, which turned out to be close to the known measurements. Using the same ratios, it is possible to find the change of bodies' weight depending on temperature (in any aggregative state) [6].

For practical purposes, it is necessary to obtain antigravity, which exceeds the rotor's weight. Theoretical and experimental results, at first glance, show the impossibility to solve this task in the near future. The only parameter, which allows a significant change of the rotor's weight, is its speed but the barrier of metal's strength prevents its increase. A rotor made using carbon fiber (the strongest known material) begins to ruin at a speed of less than 2 km/sec. Nevertheless, there is a possibility to find a way out of the impasse.

In order to describe quantitatively different dynamical processes, a parameter of "speed" was introduced. Its dimension is meter per second. These physical notions were introduced by people in their day-to-day activity starting

from their own mentality. Nature, however, has neither meters nor seconds. Physical processes are caused either by motion of matter and space or its absence and motion can be generated not only by a concentrated displacement.

We will introduce a new variable and call it mass rate. It will show quantity of the rotor mass crossing its radial section. Its dimension is kg/s. We can say that mass rate characterizes the speed of the rotor expressed through its mass.

Let's imagine now a mechanical system consisting of a big quantity of identical rotors with parallel pivot pins; their direction and speed are the same. Thus, mass of the system is increased by a whole number of masses while the period of revolution stays the same, that's why the mass rate of the system increases by the same increment. As we see, mass speed of the system grows proportionally to the quantity of rotors. Volume is connected with mass and is proportional to change, at the least, of one linear dimension. Due to this, the linear speed of the system also increases by a whole number of times (although it is impossible to indicate both the trajectory of the system's rotation and the rotation radius). Hence, square acceleration of the system will be proportional to the square of quantity of rotors. Due to the fact that the mass of the system is bigger than the mass of one rotor by a whole number of times, antigravity of the system will be proportional to the quantity of rotors raised to the cubical power. It is necessary to remember that all rotors must rotate synchronously (the run of any two rotors must be less than quarter of a turn).

Some time ago it was an irresistible problem but it was solved on its own after the discovery of the self-synchronization of multi-rotor systems by Russian scientists in 1988 [12].

The potential method of antigravity generation can be used together with the dynamical method [9] for motion in space. It is possible to create artificial gravity fields in the local area with any intensity value. This gives a wide range of technologies: particularly, generation of any mater from any source; production of materials with "negative weight",

i.e. the materials, which are pushed away by gravity fields of planets; implementation of information reception and transmission etc.

In conclusion, let's presume the following supposition. If we think that any mental (creative) constructions are real (or existing), it is possible, for example, to reduce the universe located outside the globe to the field of the Earth's radius and expand everything located inside the Earth's area to an endless universe. A conclusion follows that, in a micro-world, our nuclear-physicists conduct their experiments with mathematical points (i.e. with empty space), which coincide with the centers of masses of material objects actually occupying the volume of the entire universe. From this a supposition follows that, when going deep into the macro-world, a force appears and increases, which acts from the direction of space and compensates centrifugal force of any rotary motion. It must exist on a macro-scale, but at the same time it is too small to be registered by any existing devices.

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New Ideas

Time-reversed Amperian Currents

The key to FREE ENERGY, Antigravity and Time Travel - Time-reversed Amperian Currents!

I just uploaded the requirements drawing here: <http://www.intalek.com/Index/Projects/GMF/ComplexElectronFlow.jpg>

The drawing on the left details the method by which to create cold current. Its done by canceling a time-forward magnetic field B due to Amperian Current. An opposing external magnetic field is applied causing the electron to rotate its velocity from the real axis to the imaginary axis. A time-reverse magnetic field jB is created during the process.

The drawing on the left details the complex flow of an electron, which can move forward or

backward in time. Under the influence of a time-reversed electric field jE , the electron is moving backward in time jV , and so it's referred to as "cold current". The flow of cold current creates a time-reversed magnetic field jB .

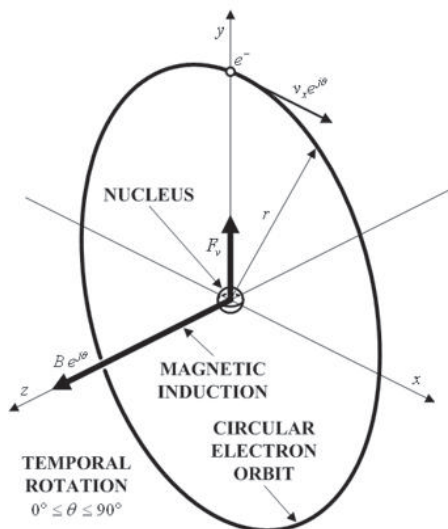
Since the NEGATIVE relativistic mass is contained within the magnetic field, this field is dissipated as anti-photons. The weight of the device within a gravity field will become lighter due to this removal of mass. The FREE ENERGY mechanism is directly correlated to time-reversed Amperian Currents.

Unlocking the secrets of this universe...

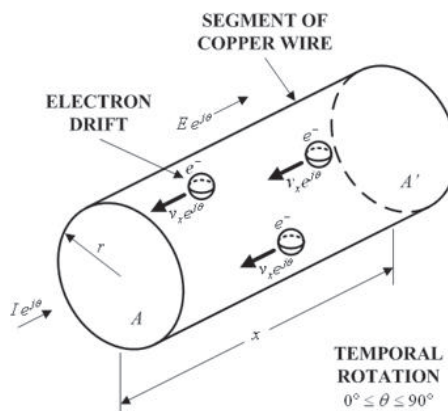
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Hypothesis of heat transformer

Perpetual motion machine of the second kind

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published with abridgements

Description of the invention

I, a citizen of the Russian Federation, Vladimir Filippov, born on the 9th of October 1950 in Tomsk, in 2002 made the following invention in the field of thermodynamics:

The possibility to design a heat transformer, which transforms heat energy of the environment into heat energy of higher temperature without energy consumption (or work production, which is necessary in the known cycles of Carnot, Stirling and others) is discovered.

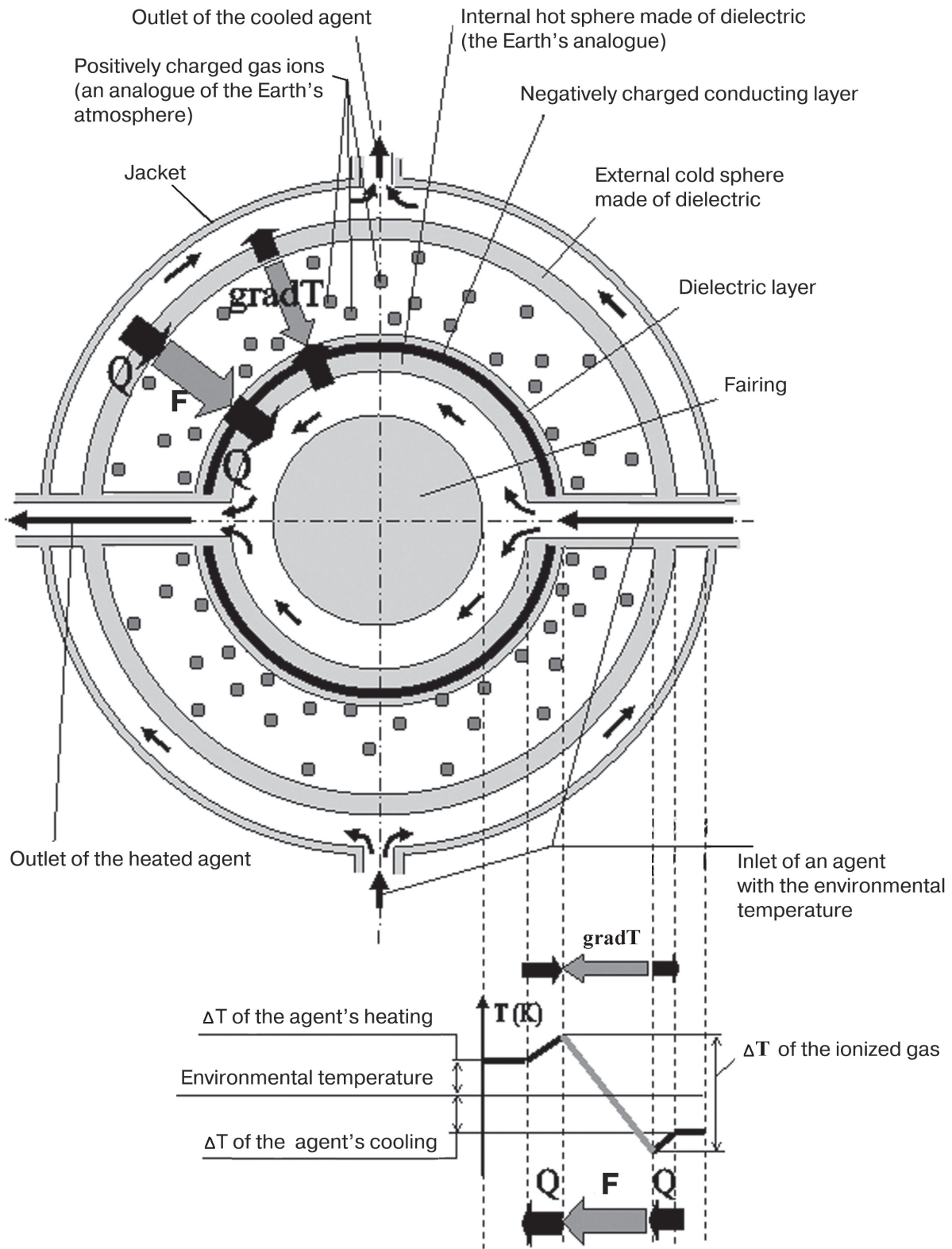
The mentioned opportunity is classified in thermodynamics as a perpetual motion machine of the second kind, which is impossible to design. However, this opinion is not shared by scientists such as Loshmidt, Tsyolkovskiy and others (journals "Russkaya mysl", Moscow, "Obschestvennaya polsa") and also our contemporaries (Yakovlev, Zayev, Rodionov, Oparin etc.).

As the background and an analogue of the given invention, Loshmidt and Tsyolkovskiy's ideas of a temperature gradient, which is spontaneously generated in bodies under the influence of a gravitation field, were taken. The temperature gradient of the earth's atmosphere and stratum proves this but practical use of this existing effect is difficult due to the smallness of the gradient caused by the weakness of gravity forces.

In order to eliminate this disadvantage, it is suggested to create a temperature gradient in bodies located in the field of electrostatic forces. Conducting of this requires certain organization and state of bodies.

As the simplest device, we take two spheres (other forms are possible) located one in another with the common center in such a way that a spherical cavity is formed between them and fill this cavity with ionized gas (for example, positively charged ionized nitrogen). We charge the internal sphere negatively while it is dielectrically isolated both from ionized gas and its own internal space; the external sphere is made of dielectric. Under these conditions, by analogy that happens in the earth's atmosphere, the temperature (and pressure) gradient must occur in ionized gas (due to influence of coulomb forces). The gradient's value can be sufficiently big (for practical use) because we can influence it with the help of quality of the internal sphere's charge, ionization degree and quantity of gas, and sizes of spheres. **Thus, external layers of ionized gas and the external sphere will have a temperature lower than the environmental temperature and internal layers of ionized gas and the internal sphere will be higher than the environmental temperature** (under according values and ratios of charge quantity of the internal sphere, ionization degree and quantity of ionized gas, size of spheres, calculated with the help of the superposition principle).

Hence, in case we initially and once charge the internal sphere, fill the spherical cavity with ionized gas (using limited quantity of energy), provide for heat supply of the external sphere (with the help of advanced heat-exchange surface and cooling of the external environment) and heat abstraction from the internal sphere under a temperature higher than the environment temperature, we will get a constantly operating heat transformer with an unlimited quantity of heat input and output



$\text{grad}T$ (K/m) - temperature gradient in the ionized gas' medium, which occurs in the electrostatic field of Coulomb forces

Fig. 1. The device

(perpetual motion machine of the second kind). As additional application of the given discovery, it is possible to discuss the possibility (under created practically unlimited parameters of matters' state) of the production of new materials.

Explanations

I begin to explain from Evgeniy Oparin's work called "Physical basis of no fuel energy engineering. Limited nature of the law of energy degradation", p. 49-56. Moscow, 2003.

"In 1876, J. Loshmidt expressed a hypothesis that the temperature of gas located in a gravitation field linearly depends on height. Correctness of the hypothesis would have denoted irreceivability of the law of energy degradation in the gravity field. Concerning this issue, a sharp scientific discussion emerged between L. Boltsman and J. Loshmidt.

Tsyolkovskiy has shown that any finite difference of heights ΔH corresponds with a quite certain differential temperature ΔT in gas in the stationery state in gravity field, and ratio

of differential temperature to difference of heights $\Delta T/\Delta H$ is not equal to 0, or within the limits with $\Delta H \rightarrow 0$:

$$dT/dH \text{ is not equal to } 0$$

K. Tsyolkovskiy has obtained the value of the static vertical temperature gradient in gas in a stationery state in a gravity field very simply and clearly according to the law of energy conservation. He considered the fall of a mass m at a height of ΔH coinciding with the change of gas potential energy $\Delta \Pi$ by the value:

$$\Delta \Pi = - mg H$$

He supposed that the change of potential energy of gas molecules according to the law of energy conservation coincides with the change of kinetic energy of gas molecules, i.e. leads to imparting heat to gas:

$$\Delta Q = mC_v T$$

In this equation, Tsyolkovskiy used C_v (heat capacity of gas under constant volume) mentioning that: "Although a part of work

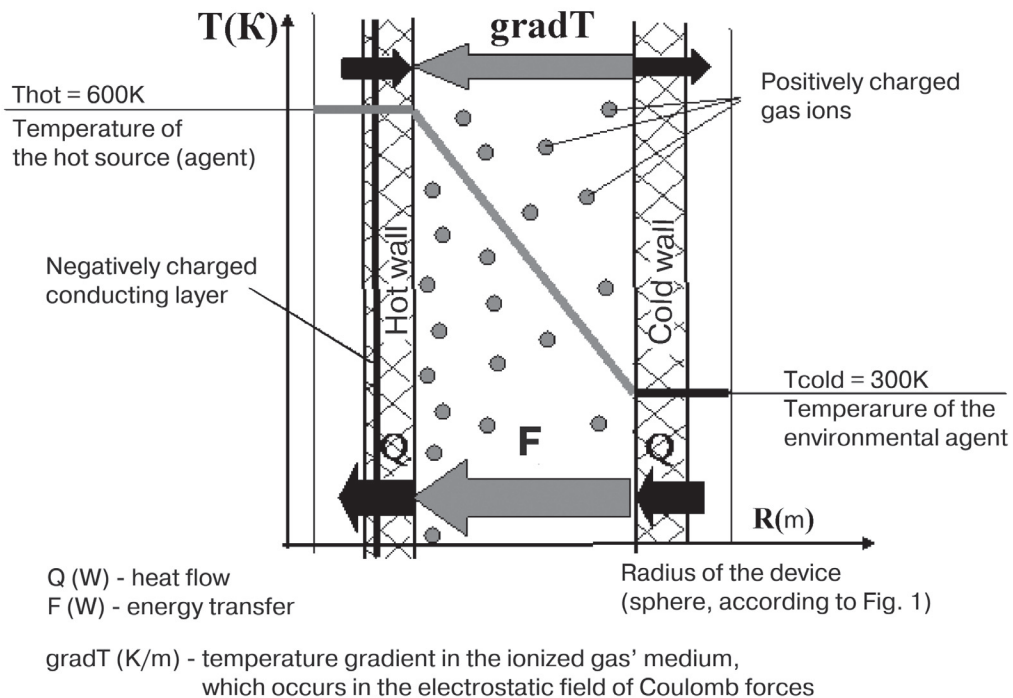


Fig. 2. Temperature field

during the fall is likely spent on gas pressure but, actually, this work does not exist because, if we suppose atmosphere balance, no pressure and no expansion of gas happens”.

Comparing right parts of the above mentioned equations, we will obtain the value of the vertical temperature gradient in the atmosphere:

$$dT/dH = -g/C_v$$

Due to the fact that g is not equal to 0 and C_v is not equal to 0, we obtain Tsyolkovskiy’s inequality:

$$dT/dH = -g/C_v \text{ is not equal to } 0$$

Using the equation $dT/dH = -g/C_v$, Tsyolkovskiy obtained the value of a stationery vertical temperature gradient in the atmosphere, which is equal to 14 K/km. (The given value is not extremely accurate, according to evaluation of Tsyolkovskiy himself. Gradient principle is important – V. Filippov’s comment).

Loshmidt has found a good confirmation of his hypothesis in dependence of water temperature on depth in artesian wells. Tsyolkovskiy saw confirmation of linear dependency in temperature change during shaft deepening as well as in the earth’s troposphere.

V.F. Yakovlev not only proved theoretically by different methods that the dependency of temperature on height must be linear in potential fields, he also showed *experimentally*, using a centrifuge, that gas temperature depends on its potential energy in a potential field of centrifugal forces.

Thus, not permanent temperature but temperature gradient is formed in macroscopic systems, everywhere where it is impossible to disregard the influence of potential fields.

In the work “Law of degradation of energy”, K.E. Tsyolkovskiy showed that the gravity field is not the only condition of heat transmission from a colder body to a warmer one in macroscopic systems. He wrote about conditions, under which the law of energy

degradation has limits: “Perhaps there are a lot of them... possibly it is gravity or maybe molecular forces. Do we really know nature completely? Or do we know only a drop from the immense ocean of Universe?”

Thus, “a black phantom of global death” inevitably follows from absolute nature of the law of energy degradation. But K.E. Tsyolkovskiy, taking the gravity field into account, saw “eternal youth of Universe”, according to E.G. Oparin.

Energy balance of the device operating in motor mode

Balance of input heat energy of the environment and derivable work in the device is the following. We set the device with ionized gas (by variation of quantity of electric charge on the internal sphere, quantity and degree of gas ionization, and also, possibly, by other parameters) and form temperature span in it: 600K in a hot layer near the internal sphere and 300K in a cold layer near the external sphere). We do not take into account energy expended for the internal sphere charging because it is made once for an unlimited quantity of cycles or time of the permanent operation of the device.

Efficiency of Carnot cycle for accepted temperatures:

$$\begin{aligned} \eta &= (T_{hot} - T_{cold})/T_{hot} = \\ &= (600 - 300)/600 = 0.5 \end{aligned}$$

We consider the device’s operation gradually (cyclically) with heat exchange under constant temperatures and infinitesimal temperature differences.

1. We conduct heat exchange (through the wall – internal sphere) between the agent (hot source) and the internal hot layer (600K) of ionized gas transmitting heat energy to the agent, for example, 100 j. Ion energy in the sphere decreases accordingly by 100 j. *

1.1. Then, we use this heat energy, 100 j, in the heat device’s cycle (Carnot) and transmit all that is necessary, according to Carnot cycle, in the environment by the standard method (if environmental temperature is 300K). We

obtain a yield of 50 j.

2. We carry out heat exchange (through the wall – internal sphere) between the environment agent and the external cold layer (300K) of ionized gas transmitting heat energy of 100 j to ionized gas (from the environment agent) and, therefore, renew the initial heat energy of gas in the sphere and initial state of ionized gas with the temperature diapason of 600/300K.**

The cycle is closed. *We have yield of 50 j.*

First, we transmitted 50 j to the environment during Carnot cycle and then took 100 j from it; as a result, we *took 50 j from the environment*, i.e. as much as the yield we obtained.

Of course, operation of the device can and must be conducted not during the cyclic mode but during the nonstop run.

Besides, if sputtering (vacuum technology) of an effective surface thermocouple (according to A.V. Kosarev) on the internal and external spheres was conducted, it is possible to take electric energy directly. In this case, it is still

necessary to lead the environment agent but not necessary for the hot source (agent) to circulate and not necessary to conduct the heat device's cycle.

Of course, there are still questions, for example, what does state function (temperature, pressure, density in arbitrary points of the sphere in dependence on tension, ionization degree, sizes etc.) of ionized gas look like and what is (in rigorous description) the equilibrium position of ionized gas in field of potential forces. How and at what speed does renewal of equilibrium position of ionized gas happen?

* We ignore the decrease of ion temperature during the process of energy transmission (100 j) to the hot source (agent) due to the fact that enthalpy of ionized gas is much bigger in comparison with 100 joules given to the agent and also due to the idealization of cycle.

** Renewal of ionized gas' state to the initial state, of course, must be proven and confirmed experimentally as well as the existence of a gradient in the field of potential forces, although, intuitively and taken into account works by A.V. Kosarev on impulse degeneracy according to Brussels schools of physics, I suppose it is most likely possible. Perhaps I will have to conduct experiments in a vegetable store because academic science does not need it: it is not interested in the earth's field.

Perpetual motion machine of “the second kind” Method of operation and power assessment

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Annotation

Description of a closed thermodynamic cycle, in which the value of work made by the labour body of the heat device is equal to quantity of heat generated by its heater, is presented. Realization of the cycle will allow the creation of heat devices (motors) with qualitatively new properties. Such properties will be either the highest efficiency of motors and minimal consumption of fuel or the possibility to operate using matter of the environment as a heater of the labour body. The devices realizing this possibility will have characteristics of

“perpetual motion machine of the second kind”. The assessment of the accessible available capacity of such devices is given.

1. Introduction

According to current opinion, all properties of processes, in which heat energy is transformed into energy of other types, are consequences of thermodynamics' postulates (its first and second laws). The second law of thermodynamics, formulated by M. Planck [1], prohibits the existence of the process, which would only result in the transformation of all

heat taken from the heat reservoir (the heater of the motor's labour body) in mechanical work. According to another equivalent formulation of the second law [2], the efficiency of any heat device, which realizes a closed thermodynamic process (cycle) by its labour body in a certain temperature interval, is limited by the efficiency of Carnot cycle for this interval. In [3] – [8], the existence of closed thermodynamic cycles, during which the labour body of the heat device produces mechanical work of value equal to quantity of heat taken from the external heat reservoir (the labour body heater), is proven. Descriptions of the construction diagrams and the operation of devices realizing cycles with these energy properties are given in [3] – [5].

Evidences of the existence of the cycles, during which full transformation of heat in mechanical work happens, are logical consequences of the first law of thermodynamics. The fact of such cycles' existence contradicts the mentioned formulating of the second law.

It is obvious that, if consequences of one physical law contradict formulating of another, they both cannot be universal. Thus, a conclusion follows from the fact that contradictions exists between consequences of one thermodynamics postulate and the formulating of another: one of these postulates is not universal. Since there are no doubts in the universal nature of the first law of thermodynamics (law of energy conservation), we must refuse the doctrine of universal nature of its second law's formulating, i.e. we must acknowledge that situations can possibly exist, when some of the formulating does not work. This is confirmed in [9] – [12].

2. Full transformation of heat into work happens during the cycle when aggregative state of the heat device's labour body changes.

Then a cycle is considered, which allows realizing the process of transformation of heat obtained by the labour body of the heat device from its heater into equivalent mechanical work in the simplest way.

The cycle's attributes are the following:

- The labour body of the heat device produces a yield during the process of adiabatic expansion from the initial state of the cycle:
- In this process, the matter of the labour body changes its aggregate state forming a heterogeneous system from the equilibrium phases of liquid and prime steam;
- Expansion comes to an end when the density of the liquid phase's matter becomes equal to the initial density of the homogeneous labour body;
- On completion of expansion (with minimal temperature of the cycle) phases of the labour body are separated from each other by a hard diathermal partition;
- The heterogeneous labour body is adiabatically pressed to initial density keeping the heat balance between phases and the constancy of volume and mass of the liquid state's matter;
- Parts of the labour body separated by a diathermal partition are united in the initial volume;
- Heat contact between the labour body and the heater is made;
- The labour body is heated isochorically up to initial temperature of the cycle by heat produced by the heater.

Processes of the cycle by T-S diagram are shown on Fig. 1. A border of two-phase state regions of the labour body is formed by diagrams of specific entropies' temperature dependencies of $S_l(T)$, $S_s(T)$ of equilibrium phases of the used matter's steam and liquid. Minimal temperature of the cycle T_{min} can be chosen at will from an interval within the limits, which are melting temperature T_{mel} and critical temperature T_{cr} of the matter. A lot of possible initial states of the labour body in the cycle are presented by a section of the isochore limited by points 3 and 5 with parameters of $T_{min}, S_l(T_{min})$ and $T_{max}, S_s(T_{min})$. Initial density of the labour body in the cycle is equal to density of matter in the liquid phase under minimal temperature. The process of adiabatic expansion of the labour body from the initial state with parameters of T_o, S_o is presented by the section 1-2. Points 3 and 4 are states of equilibrium phases of the heterogeneous labour body under minimal temperature of the cycle. States of matter of phases remote from one another during the process of adiabatic

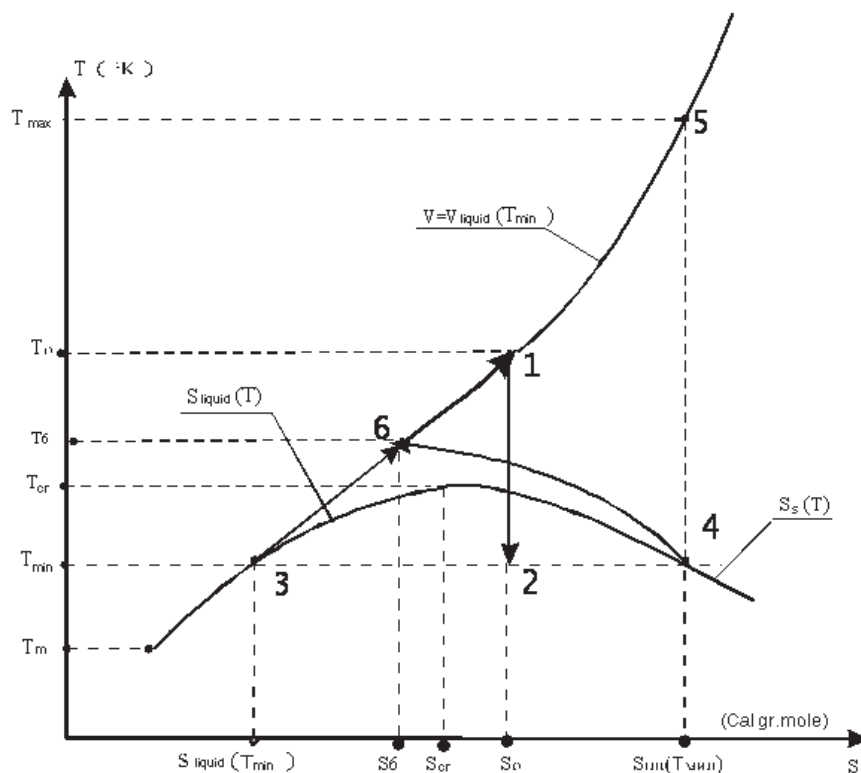


Fig. 1

compression of the heterogeneous labour body are presented by the isochore section 3-6 and the curve 4-6, which shows states of steam phase matter in the process. Heating of the unified matter of the labour body by external heat is shown by the isochore's section 6-1.

Construction diagram of the device offered for realization of the cycle [13] is shown on Fig. 2.

The operation process in each cylinder is the following:

The initial state of the labour body coincides with the extreme low position of the piston. Valve 5 is open and heat valve 7 is closed. The homogeneous labour body is adiabatically insulated from the heater and the environment. Upward motion of the piston is accompanied by the adiabatic expansion of the matter and its division into phases of steam and liquid. Liquid flows down and fills a capacity under partition 4. Infill ends when the piston is in its extreme high position. Valve 5 closes dividing the labour body phases from each other. During backward motion of the piston compression of the steam phase matter and adiabatic heating

of all heterogeneous matter happen. Its temperature is less than the initial one at the moment of the piston's returning to the extreme low position. The matter's returning to the initial state is attained by opening of valve 5 and heat valve 7. Heat moving through heat system 6 isochorically heats the unified matter of the labour body to its initial temperature. After the heating is completed, valve 7 closes and a new working cycle begins in the cylinder.

3. Use of the cycle for yield production by transformation of free heat taken by the environment from the matter.

Evaluation of accessible capacity of the heating device, which realizes the process.

If maximal (initial) temperature of the labour body is chosen less than environment temperature in the described cycle, heat transformed into work can be transferred from the matter to the labour body without mechanical work consumption, i.e., in this case, the environmental matter can function as the heater of the heating device's labour body. It is

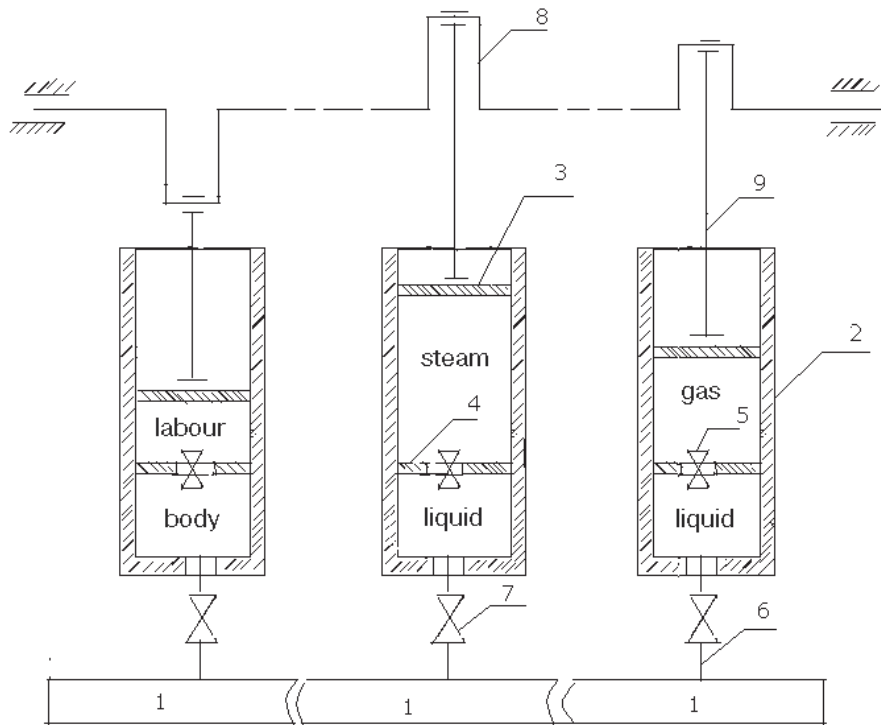


Fig. 2.

- 1- a heater with a temperature higher than the initial temperature of the labour body during the cycle;**
- 2- cylinders (there can be any number of them in the device) containing the labour body in capacities limited by the cylinders' walls, their ends and moving pistons 3;**
- 4- a hard diathermal partition in the cylinders and valves on them 5 designed for division of the labour body's phases;**
- 6- systems for heat transmission from the heater to the labour body in the cylinders;**
- 7- heat valves for the renewal of the adiabatic insulation of the labour bodies in the cylinders;**
- 8- a crankshaft and a flywheel on it;**
- 9- mechanisms connecting pistons in the cylinders with the crankshaft**

seen from Fig. 1 that, among a quantity of possible initial temperatures of the cycle presented by ordinates of the isochore 3-5 section's points, there will be sufficiently low temperatures if either the critical temperature or the melting temperature of the matter is less than the external temperature.

Real matters meeting these needs are, for example, Ar, N₂, CO₂ and others. A heater of the device designed for transformation of heat taken from the environment into work must be made as a heat exchanger, through which external matter flows. The average capacity of the device is equal to the quantity of heat transferred during a unit of time from environmental matter to the labour body. In order to provide for stable operation of the device, a part of the produced capacity must be

spent on matter's flushing through the heat exchanger. The available capacity is equal to the difference between the average capacity of the device and the capacity used for flushing. The ability of the heat exchanger to supply heat to the labour body is determined by the following parameters:

- the difference of environmental matter's temperatures ΔT measured at the input and output of the heat exchanger in the flow running through it;
- square S of the section of the canal where the flow runs;
- the speed of environmental matter's flow at the heat exchanger's input;
- the physical constants of environmental matter (density ρ , molecular weight m , heat capacity C_v).

Evaluation of the accessible capacity of the device realizing the process of free heat conversion is presented by the formula [7]:

$$W_{\text{avail}}^{\text{max}} = \sqrt{\frac{1}{m}} \cdot \frac{S}{V_{\text{norm}}} \cdot \left(\frac{2}{3} \cdot C_v \cdot \Delta T \right)^{3/2}$$

V_{norm} - molar volume of gas under normal conditions.

As an example, the following values of quantities in the formula are taken:

$$\Delta T = 10\text{K}; C_v \cong 5 \text{ cal/degree} \cdot \text{mole};$$

$$S = 0.25 \text{ m}^2; V_{\text{norm}} = 22.4 \text{ l/mole}; m \cong 29 \text{ g/mole}.$$

Design factors of the device are S and ΔT . Their values also determine the size (capacity) of the device. During the optimal operation mode of the device with these parameters' values,

$$W_{\text{avail}}^{\text{max}} \approx 107 \text{ kW}$$

The available capacity of the heat device realizing the process of transformation of free heat taken from environmental matter into work can be compared (with similar HWD) with the capacity of heat devices of known types.

4. Conclusions

1. Closed thermodynamic cycles exist, in which positive work performed by the heating device's (motor) labour body is equal to the quantity of heat transferred to the labour body from the external heat reservoir (the heater of the labour body). Proofs of cycle's existence are logical consequences of the first thermodynamics' law.

2. Existence of thermodynamic cycles with such energy properties displays the presence of a contradiction between the first thermodynamics law and some admitted formulation of the second law. In order to find out the solution, it is necessary to refuse the doctrine of universal character of all the second law's formulations and admit that the adaptability of some of them is limited, i.e. situations are possible when these formulations do not work.

3. A fact of existence of thermodynamic cycles, the realization of which will provide for full heat transformation into work, displays the possibility to design heat devices (motors) with quantitatively new properties.

4. Heat motors, which transform all high-temperature heat generated by fuel combustion into work, will have higher efficiency than existing motors. Their efficiency will be sufficiently higher than the Carnot cycle's efficiency in used temperature intervals. Increase of accessible efficiency up to values close to 1 will allow every user to cut fuel consumption by 2 - 3 times and decrease the pollution of the environment by combustion materials and diffused heat.

5. Realization of the discovered opportunity to perform work by the transformation of free energy taken from the environmental matter will lead to the design of devices, which have properties of a "perpetual motion machine" of the second kind. Evaluation of accessible capacity of such motors lets us suppose that their practical development and wide use in different technology fields is expedient. Quality advantages of the suggested devices over the known sources of free energy (hydraulic, wind, solar, geothermal etc.) will be the independence of their efficiency from the environment (place, time, weather etc.) and a big specific output (per unit of the device's capacity). New sources of free energy will allow users to satisfy their needs for energy or heat with maximal economy and complete ecological cleanness. The autonomous operation of these devices will provide users with independence from known external sources of energy, heat, and fuel.

6. Consumer qualities of the suggested devices (economy, portability, ecological cleanness, the possibility to change available capacity within wide limits) will create an unlimited market for them. Businessmen, who organize their production and sale in sufficiently large quantities, will be well-provided for high and stable profit.

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Development of resonance methods of electric energy transmission in Russia

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One hundred seven years ago Nikola Tesla published the results of his experiments on the resonance method of electric energy transmission [1, 2]. Today only a historic marker is left from his famous electrical laboratory in Colorado-Springs, USA (Fig. 1, 2); his patents are unknown, and Tesla's transformer was mentioned in manuals of electrotechnology only up to 1940 [3, 4].

Resonance methods of electric energy transmission were found useful for high frequencies in radio engineering and communication engineering and they are also used on low frequencies in electrothermics.

In the beginning of the XX century, there were no diodes, transistors, lasers, TV and solar batteries; and three-phase networks on frequency of 50-60 Hertz successfully coped with the task of transferring electric energy in quantities ranging from some W to thousands of megaW for a distance of 100 – 1,000 kilometers [5]. Due to this, Tesla's works on electric energy transmission have been gradually forgotten since his death [6].

In connection with development of integrated power systems in Europe, North and South America and suggestions on the creation of a global power grid of Earth, problems of designing devices for transmission teraW transcontinental flow of electric energy appeared [7, 8]. Problems of electromagnetic safety and reliability of power supply along with the quickly growing cost of lands can be completely solved during the change from air transmission facilities to cable high-voltage lines. But cable systems of electric energy transmission for a long distance are possible today only using direct current. The third method can interfere in the competition between systems of electric energy transfer using direct and alternating current: the

resonance waveguide method of electric energy transmission on heightened frequency, which was proposed by Tesla in 1897 for the first time [9].

In the thirties of the XX century, the theoretical basis of the use of a single conductor as the waveguide in order to transfer electric energy on high frequency was developed [10]. Current in cylindrical waveguides is closed in the form of biasing currents flowing along the waveguide's axis; and current in the single waveguide is closed in the form of biasing currents in the environment around the conductor. In connection with the presence of a phase shift, surface charges appear on the surface of the single opened conductor between waves of current and voltage. They create coulomb exciting electric fields and these fields lead to the occurrence of coulomb currents in the conductor [11]. Thus, a potential electric field is generated in the conductor, which provides for charges transfer and current in the conductor. The described processes have an electrostatic nature and are accompanied by small losses in the conductor. If we take two condensers, one of them charged, and make a closed circuit of these condensers, the conduction current in the closed circuit will create Joulean losses in conductors connecting the condensers.

However, if we connect a charged spherical condenser by a single conductor with an uncharged sphere, charges transfer from one sphere to another will not be accompanied by Joulean losses. In this case, a circuit is opened and there are no conduction currents in there.

Surface charges in the single conductor waveguide change in time and create a biasing current in the environment around the conductor, which is closed by a current in the conductor excited by the potential coulomb

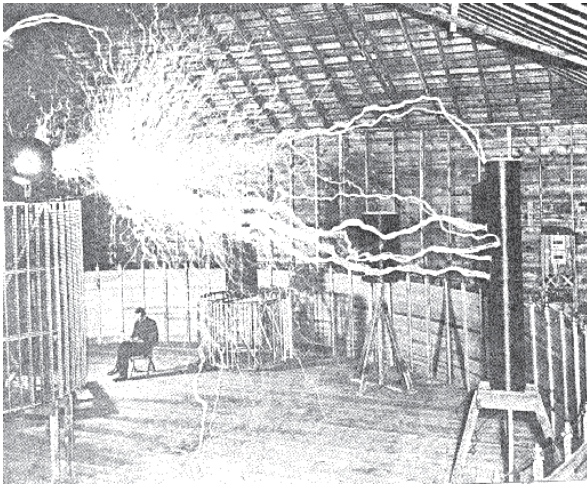


Fig. 1. N. Tesla in his laboratory in Colorado-Springs, 25 – 31 December 1899. [2]. The picture is published with the permission of N. Tesla’s museum in Belgrade.



Fig. 2. Professor D.S. Strebkov next to the historic marker in honour of N. Tesla in Colorado-Springs, 27 February 2004.

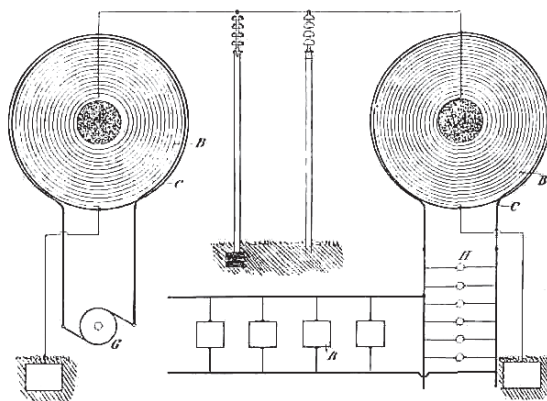


Fig. 3. Electric circuit of N. Tesla’s device for resonance system of electric energy transmission [9].

electric field. It is known that biasing currents, unlike conductor currents, are not accompanied by the generation of Joulean heat [12].

No heat is extracted during current flow through the conductor excited by the voltage of the coulomb electric field.

N. Tesla wrote that processes of electric energy transfer in his resonance high-voltage systems have electrostatic nature and, due to this, have low losses.

In the USSR, revival of resonance technologies of electric energy transfer began from works of an engineer of the All-Union Electrotechnical Institute in the name of V.I. Lenin (VEI) S.V. Avramenko. In the eighties of the XX century, he developed and patented single-wire electric systems with a power of 10 – 100 W and voltage of 1 – 100 kV. S.V. Avramenko used thyristor frequency converters of 1 – 30 Hertz and his own capacity of Tesla’s step-up and step-down transformers in order to generate resonance. Since 1990, these works were developed in the All-Union Institute of Agricultural Economics (VIESH), where S.V. Avramenko worked as an engineer (combining jobs) in the laboratory of electrical equipment use (the head of the laboratory was a candidate of technical science A.I. Nekrasov).

In his patents [3, 4], S.V. Avramenko referred to N. Tesla’s works, however, that time he did not know Tesla’s patent [9] for the single-wire system, thus, he practically invented and made it again (Fig. 3, 4). S.V. Avramenko wrote [13, 14]: “It is necessary to say that energy transfer using a single wire was demonstrated by Nicola Tesla as long ago as in 1894. But no concrete information about the realization of this experiment is known”. In fact, N. Tesla’s patent [9] (Fig. 3) and numerous articles in [1], and also more than 300 pages containing the description of N. Tesla’s experiments in his laboratory in Colorado-Springs [2] contain large volumes of data on the single-wire resonance system (RS) of electric energy transmission developed by N. Tesla.

Obviously, at the time when S.V. Avramenko wrote his patents, he had no access to the works [1, 2, 9]. In order to rectify current and voltage

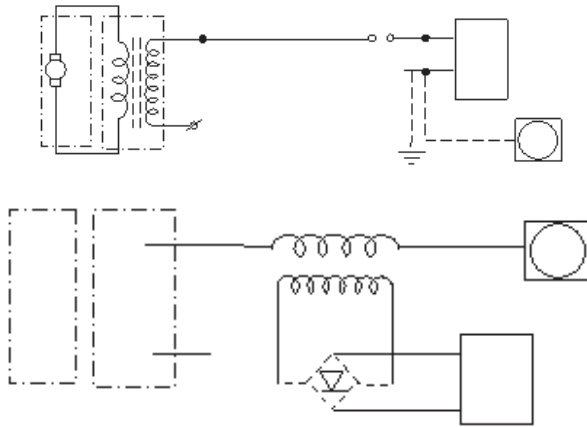


Fig. 4. Electric circuit of power supply of transmitting (a) and receiving (b) devices by Avramenko for resonance transfer of electric energy [13]. (here and then notations on figures are explained in the text)

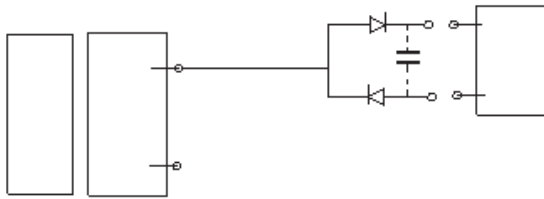


Fig. 5. S.V. Avramenko's plug for current rectifying in the single-wire line [13]

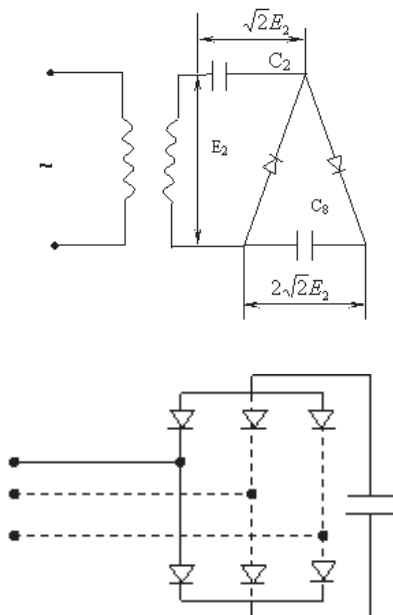


Fig. 6. Circuit of voltage doubling (a) and circuit of monophasic input of three-phase bridge rectifier (b).

in the one-wire line, S.V. Avramenko offered his famous "Avramenko plug", a diode-condenser block, which was unknown to Tesla because there were no diodes in XIX century. Still the "Avramenko plug" is a component of the known voltage-doubling circuit or monophasic input of any bridge rectifier (Fig. 6).

Using properties of reactive cold plasma occurring as a result of the single-wire line's break, S.V. Avramenko developed and patented electro-an plasma coagulator, which is successfully used in veterinary medicine, cosmetology and medicine [15, 16].

Our acquaintance with S.V. Avramenko began after his letter addressed to the secretary of the Central Committee of the CPSU Egor Ligachev, where S.V. Avramenko suggested using his invention for the development of the electric supply of remote customers in rural regions with small line losses. E. Ligachev's instruction to investigate and prepare suggestions was transferred to VIESH through the head of the Ministry of Agriculture M.P. Kharin. A commission of VIESH's academic council was formed. S.V. Avramenko gave a speech in front of the commission and demonstrated the work of a fan with an electric motor of 5 W and a lamp during an electric energy transfer over the single-wire line from the power circuit of 220 V, 50 Hertz. Scientists of VIESH approved S.V. Avramenko's work and suggested using the new method for the electric energy supply of remote rural regions. S.V. Avramenko was invited to continue working on the resonance single-wire electric system (RSES) in the department of electric power supply and the Academy of Agricultural Sciences assigned 100,000 roubles for the production of equipment and conducting of research. Using this money, transmitting and receiving blocks of the resonance electric system with power of 100 W and voltage of 10 kV were produced in VIESH with the assistance of S.V. Avramenko.

In the nineties, D.S. Strebkov was invited to N. Tesla's museum by a director of the Institute of Chemical Current Sources in Belgrade, Doctor Petar Rakin. With his financial support, D.S. Strebkov visited the museum and got three volumes of Tesla's works in English, which were

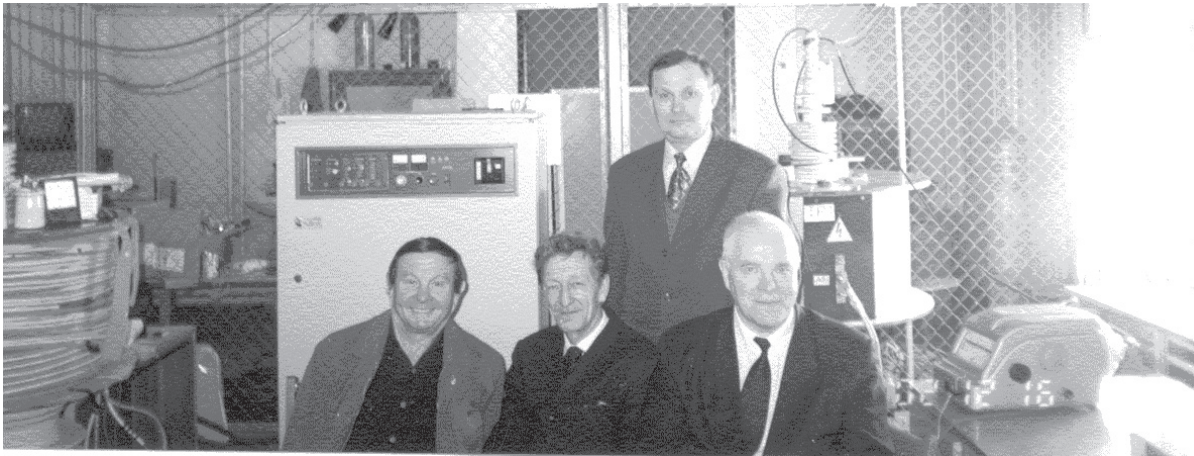


Fig. 7. Testing of the resonance RS-20 in VIESH on the 16th of December 2002. From right to left: D.S. Strebkov, A.I. Nekrasov, S.V. Avramenko, O.A. Roschin.

prepared for publication by the museum, including [1, 2]. The study of N. Tesla's patents and articles helped to considerably hasten and develop works on resonance methods of electric energy transfer made in VIESH.

Since the "umbrella" patent of S.V. Avramenko was obtained in the USA and other countries,

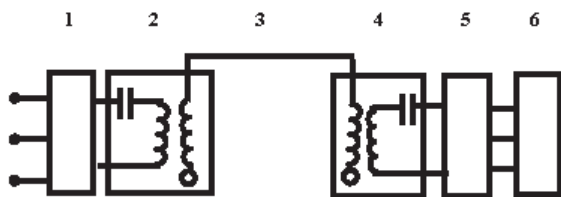


Fig. 8. Electric circuit of RS
1 - frequency converter; 2 - resonance circuit of step-up transformer; 3 - single-wire line; 4 - resonance circuit of step-down transformer; 5 - rectifier-inverter; 6 - load



Fig. 9. Frequency converter and resonance circuit of transmitting high-voltage transformer with electrical power of 20 kW, 10 kV.

we prepared the first patents of the Russian Federation for RS use in mobile energy engineering. VIESH has been developing electric tractors with cable power supply for many years, and we decided that the use of RS would allow decreasing the weight of the cable drum from 3 tones to 30 – 50 kg and improving the reliability of mobile aggregate's power supply. We have invited S.V. Avramenko as a co-author in all patents of the Russian Federation (more than 10 of patent applications were filed by VIESH) as he had been an initiator of RS in Russia.

On the 31st of March 2003, S.V. Avramenko unexpectedly died of stroke. He was a talented Russian electrical engineer and a propagandist of Tesla's works. S.V. Avramenko made much for the popularization of N. Tesla's ideas (Fig. 7).

He was an excellent electric engineer and, in his experiments, demonstrated the abilities of the single-wire electric system to transfer electric energy with small losses over tungsten wire with a diameter of 10 micrometers. In the nineties, in VIESH, the testing of a single-wire line made of fishing-line with a diameter of 1 mm covered by an aluminium film with thickness of 0.4 micrometers was carried out using the device of S.V. Avramenko with power of 100 W. Then, a quartz fiber-optic line with a diameter of 1mm covered with an aluminium protective layer was tested as a single-wire line. After that, D.S. Strebkov suggested using layers of water, soil, oxide conductive films on

the basis of oxides of indium and tin (ITO) on a glass surface as the single-wire lines. Successful experiments were conducted and patents of the Russian Federation were obtained. In 2000, D.S. Strebkov suggested using laser beams in the atmosphere and ionosphere in order to create a pipe in resonance system of electric power supply of aircrafts and the Earth. Afterwards he obtained a patent for the use of an electronic beam in order to transfer electric energy in space and energy exchange between spacecrafts and earth with the help of counter-laser-electronic beams.

In 2001, VIESH accepted with thanks an offer of the deputy director general of “Surgutgazprom” company F.S. Burganov to develop a prototype of RS with an electric power of 20 kW. At that time, VIESH had a prototype with a power of 100 W and it happened to be a rather serious problem to create a system with a power of 20 kW in a brief period of time. We had to completely change the design of the transformers made by S.A. Avramenko and make the transformer’s characteristics more similar to Tesla’s transformers. We also had to develop new elements of the resonance circuit and their set up methods.

The operation principle of RS is based on the use of two resonance circuits with a frequency of 0.5 – 50 kilohertz and a single-wire line between the circuits (Fig. 8) with a line voltage of 1 – 110 kilovolt during the resonance operation mode. Electric energy transmission is carried out with the help of capacitance

currents and biasing currents, that is why Joulean losses in the line during heating of the conductor are minimal.

Any conductor can be used as the single-wire waveguide, for example, a steel wire or any other conducting medium, which plays the role of a guide of electric energy flowing from the generator to the receiver.

In order to adjust a standard electric energy supply system with the suggested one, matching devices and transformers are developed, which are set in the beginning and in the end of the single-wire line and allow using standard electrical equipment of direct and alternating current at the inlet and outlet.

An industrial transformer of 25 kW frequency, which was used by us for designing the new device, had water cooling. It was inconvenient for autonomous use. In order to obtain a three-phase network of 50 Hertz at the outlet of the system, design of a P-22 frequency transformer was changed and improved and three monophase chokes for operation with a load module made of an incandescent lamp were produced. RS with a power of 20 kW was successfully tested in VIESH and at KS-5 object owned by “Surgutgazprom” company in Tumen region [17] (Fig. 9). The testing results for RS-20 are given in Table 1.

The developed design solutions laid the foundation for production of resonance systems with a power of 100 – 1,000 kW.

Table 1. Testing results of resonance system with electrical power of 20 kW

Electrical power with load, kW	20.52
Current, ampere	54
Voltage, V	380
Line voltage, kV	6.8
Line frequency, kilohertz	3.4
Line length	6 m 1,7 km
Diameter of line wire	0.08 mm 1 mm
Maximal effective current density by unit of square of line conductor’s cross-cut, ampere/mm ²	600
Maximal specific electric output in single-wire line, MW/mm ²	4

Advantages and possible fields of application of RS are the following [18].

Scope of the use of resonance single-wire energy system

1. Electric energy supply of agricultural and rural settlements.
2. Single-trolley and single-conductor cable hybrid electric-transport.
3. Fundamentally new single-electrode electrical devices and plasmotrons: electric cultivators, water and sewage disinfection, ozone production, veterinary plasma coagulators and scalpels.

Advantages of resonance method of electric energy transmission

1. Electric energy is transferred with the help of reactive capacitive current in the resonance mode. Unauthorized use of the energy is made difficult.
2. Aluminium and copper content in the wire can be reduced by 5 times.
3. It has no reason to steal steel wire with copper coating of 0.1 mm in order to sell it as scrap metal.
4. Electric energy losses are small in the single-wire line, and electric energy can be transferred for long distances.
5. Short circuits are impossible in the single-wire cable and it cannot cause fire.

In VIESH, the development of resonance methods of electric energy transmission is being carried out by radio engineer A.N. Karamzin, electrical engineers A.I. Antonenko, V.V. Shemiakin, O.A. Roschin, L.Y. Yuferev, V.Z. Trubnikov, A.B. Sivtsov, G.S. Liapin, and V.I. Volosatov. Talented Russian scientists, candidates of technical sciences Zayev and V.I. Verutin are working on these problems. Doctor of technical sciences A.P. Korshunov and candidate of technical sciences V.N. Shabarov are developing technical and economic characteristics of RS.

President of the Russian Academy of Agricultural Sciences G.A. Romanenko, Corresponding Members of the Russian Academy of Sciences A.F. Dyakov and N.S. Lidorenko, a deputy minister of energy of

the Russian Federation V.S. Stanev and the head of technological progress department of Ministry of energy of Russia P.P. Bezrukih visited bench room of VIESH and attended on RS testing. A deputy director general of "Surgutgasprom" company F.S. Byrganov, the deputy chief of energy department of "Gazprom" company O.A. Kuznetsov rendered assistance in production of the prototype RS-10kW.

In the laboratory of VIESH, a small pool is demonstrated, where fish live and a model of an electric river boat sails generating electric energy from tap water (Fig. 10).

Electromagnetic waves in certain frequency range are poorly absorbed by seawater and soil and, therefore, can be used in the system of underwater and underground information transmission. Weakening of electromagnetic waves in sea water is [19]:

$$\alpha(f) = 0,00345\sqrt{f} \text{ decibel/m} \quad (3.8)$$

At a frequency of 100 Hertz attenuation at a sea depth of 300 m will be 90 decibel.

Our experiments show that not only electronic information but also electric energy can be transferred over seawater and the ground. The resonance single-wire system of energy transmission has considerable advantages in comparison with the transmission of electromagnetic waves in air [20]. First of all, this is high efficiency of energy transmission (more than 85%) when using rather simple electrical equipment. High efficiency is conditioned by the presence of a resonance pipe between the generator and the receiver. The second important difference is connected with the resonance power station not needing to receive and transmit aerials. It is only necessary to provide for resonance in high-voltage and low-voltage of Tesla's transformer winding. This means that, for example, a submarine vessel can generate energy from water not lifting up any scanner assemblies.

The third important conclusion is that, in order to transmit energy, no air transmission facilities are needed. They are the main source of the disruption of service caused by ice-cruised

ground, hurricanes, fires, and earthquakes. Future energy engineering will use reliable and safe underground and underwater single-wire cable lines and also seawater and the ground as the single-wire resonance line.

N. Tesla wrote: “Perhaps the most significant application of wireless energy engineering will be the power supply of aircrafts, which will move without fuel”. [6]. Scientific ideas and patents stated in [18] allow beginning practical realization of no fuel aircrafts and making possible things, which could not be predicted by Tesla: to provide for resonance energy transmission over an electron beam between spacecrafts and, over counter laser and electronic beams, between the Earth and space objects.

N. Tesla believed that his resonance methods of electric energy transmission will be widespread in the future. The same belief has been supporting us during our work. We will see what will change in energy and electric engineering in one hundred years. Our forecasts on the

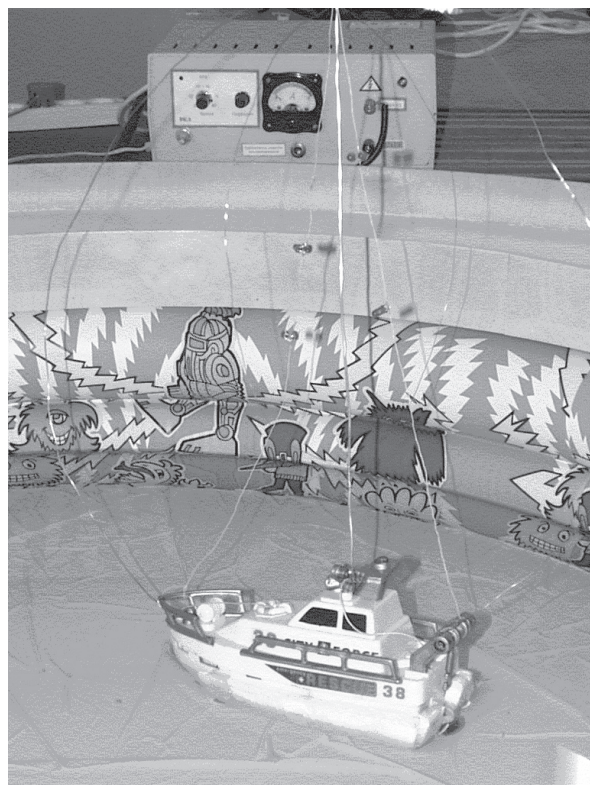


Fig. 10. Testing of the river boat model in VIESH’s laboratory using tap water as the single-wire waveguide. The transmitting block has an electrical power of 100 W and a voltage of 1 kV.

development and use of resonance waveguide methods of electric energy transmission can be summarized as the following:

- Air transmission facilities will be substituted by underground waveguide systems.
- Electrical machines-robots with active labour bodies will operate at agricultural plantations.
- A global solar energy system generating electric energy, hydrogen fuel and heat for every person on Earth will be created.
- Liquid fuel and gas will be generated from the biomass of agricultural plantations.
- Spacecrafts will be launched from Earth using electrical jet propulsion. They will have a ratio of payload mass to launching mass 80 – 90% instead of today’s 5%.
- Power supply of aircrafts in space and transmission of electric energy to mobile objects on Earth will be made by wireless methods
- Resonance methods will be used for medical treatment of people and animals, extermination of weeds (instead of pesticides), drinking water and waste disinfection, creation of new especially pure materials (first of all, solar silicon), and hydrogen production.

The twentieth century was the last century of cheap energy. The age of cheap energy came to an end and new energy technologies are necessary to provide for sustainable future development. New energy technologies will not use fossil fuel. The global solar energy system [8] consisting of three solar power plants located in Australia, Africa and North America will be able to provide for electric energy, hydrogen fuel and heat all Earth’s regions twenty-four hours a day for a million years and turn all electric power stations using fossil fuel into a class of emergency power plants. Maximal efficiency of solar cells achieved in laboratories is 36.9% and their practical tenure of employment is 50 years.

In order to make the global solar system operate, it is necessary to organize transcontinental teraW flow of electric energy. Resonance technologies of electric energy transmission can be used for creating the global energy system. Mankind will be able to unite

and concentrate its energy reserves and technologies in order to create adequate living conditions for every person and realization of important scientific and technical projects on Earth and in space.

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Hydrogen energy

**Review is prepared by S. Shlenchak
using materials from sites <http://www.piarim.ru>, <http://service.sch239.spb.ru>,
<http://www.kko.eago.ru>, <http://www.compulenta.ru>, <http://www.fctec.com>**

In case the problem of cheap generation of hydrogen fuel and development of the technology of its accumulation, store and transportation would be solved, mankind would obtain an inexhaustible source of ecologically clean energy carrier built into natural system of water circulation.

Forecasts concerning time when oil in wells will come to the end strongly differ from each other. The most pessimistic looks to the future tell that this "black day" will come in 10 years making a reservation that "bad oil" will be left

somewhere. Others postpone this time to 60-80 years. Anyway no forecast gets past the point of 100 years. But what will happen then? Then we will change to gas; its reserves will last 150-200 years. And after gas, obviously, coal will be used; its reserves will last 600-800 or even 1,000 years according to evaluation of some specialists. Basically, there are enough alternative energy sources and, as time goes by, progress and human imagination will find and make accessible energy sources, which seem to be almost fantastic today.

Now world pins its hopes on hydrogen energy. During combustion, hydrogen generates twice more heat than natural gas, three times more heat than oil, and four times more than coal. During hydrogen combustion, water is steamed in atmosphere, i.e. the process of hydrogen combustion does not pollute atmosphere. The fact that there is a giant, almost inexhaustible hydrogen source - water - exists on earth is attractive.

The oldest method of hydrogen production is water electrolysis. During it, direct current is running and hydrogen is accumulated on the cathode while oxygen is accumulated on the anode. This technology makes it too expensive energy carrier due to the simple reason that energy consumption for hydrogen generation exceeds profits from its subsequent use as fuel.

Due to this, hydrogen is used now only for launching spacecrafts with hydrogen-oxygen engines. Mostly hydrogen is produced using technology of hot processing of water steam under temperature of 700-900C with light petrol and heavy liquid fuel collecting oxygen. But this method is expensive too.

Now extensive search of a catalyst promoting water decomposition into oxygen and nitrogen with small energy consumption is carried out. Japanese specialists reported that they had discovered and were investigating a catalyst on basis of less-common metals' oxides decomposing water into hydrogen and oxygen under the influence of sunlight, with small energy consumption. But the process is obviously still a long way from perfection.

Some projects of cheap hydrogen generation exist. For example, it is suggested building several huge electric power stations in Greenland, which would use water from melted snow for the electric energy production and energy would be used for electrolysis for generation of hydrogen, its liquefaction and transportation by pipelines and tankers in Europe and America. Another project is a use of nuclear and special solar power plants' energy for hydrogen generation by water electrolysis.

However, nature itself gives a method of water generation without big energy consumption.

On a surface of suspension particles in water, adsorbed ferments exist. They are fixed on the surface and have a high specificity of catalytic effect. They can decompose one connection in one of matters having high activity under usual conditions. Immobilized ferments can be used for hydrogen production.

Just imagine a handful of powder with the ferment immobilized on particles. The powder is put into a jar with water standing in the sun and an active hydrogen production begins in the jar. Attempts to create such a "magic power" are already undertaken.

Perhaps it is possible to produce hydrogen using specially raised bacteria, thus, genetic engineering projects in this field has good perspectives. There are a number of bacteria in soil, which produce hydrogen as a byproduct.

Finnish specialists are developing a method of hydrogen production from vegetable oils. The idea is that a catalyst is used, which uses air oxygen for natural heating, during which oil transformed by steam gives hydrogen away.

Processing one ton of biomass allows producing about 160 kg of hydrogen. In order to produce one molecule of hydrogen, 103 kJ of heat is spent while during combustion of the same molecule 285 kJ of heat is produced. Hence, positive energy effect is obvious. Pay-back period of such device is presumably 3-5 years.

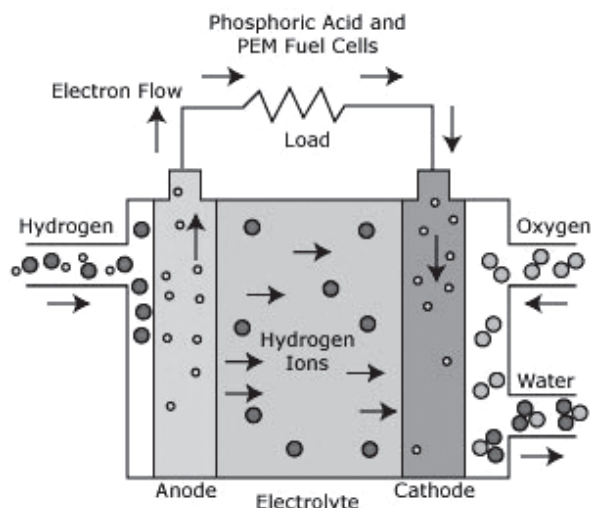
Seawater is also a source of hydrogen generation. Now a technology is developed for hydrogen generation from seawater using thermochemical method, which is much cheaper than electrolysis.

At present development of a new technology of hydrogen generation from water by high-temperature electrolysis is planned. The new technology will allow obtaining comparatively cheap hydrogen. Development works will be carried out by State Laboratory of Environmental Research and Engineering of Idaho (USA) in collaboration with an American company Ceramatec. 2.6 million dollars are given for conducting of works. A merchantable type of the device can appear in 2017.

High-temperature helium reactors will be used in the designed device. Such reactors provide for a possibility to produce electric energy with high efficiency in a gas-turbine cycle and also for production of a big quantity of heat energy.

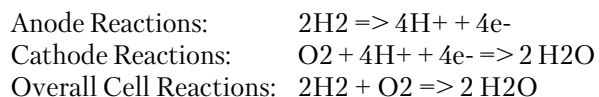
An operation principle of the future complex is the following. During power supply, water molecule's decomposition into oxygen and hydrogen happens. During further temperature increase approximately to 1,000 centigrade degrees, oxygen migrates through the membrane and pure hydrogen is left in the reservoir. The main innovation suggested by the researchers is the membrane's material. It is planned to make the membrane of superfine ceramic plates preventing re-combination of oxygen and hydrogen.

Proton Exchange Membrane Fuel Cells (PEMFC) are believed to be the best type of fuel cell as the vehicular power source to eventually replace the gasoline and diesel internal combustion engines. First used in the 1960s for the NASA Gemini program, PEMFCs are currently being developed and demonstrated for systems ranging from 1W to 2kW.



PEM fuel cells use a solid polymer membrane (a thin plastic film) as the electrolyte. This polymer is permeable to protons when it is saturated with water, but it does not conduct electrons.

The fuel for the PEMFC is hydrogen and the charge carrier is the hydrogen ion (proton). At the anode, the hydrogen molecule is split into hydrogen ions (protons) and electrons. The hydrogen ions permeate across the electrolyte to the cathode while the electrons flow through an external circuit and produce electric power. Oxygen, usually in the form of air, is supplied to the cathode and combines with the electrons and the hydrogen ions to produce water. The reactions at the electrodes are as follows:



Compared to other types of fuel cells, PEMFCs generate more power for a given volume or weight of fuel cell. This high-power density characteristic makes them compact and lightweight. In addition, the operating temperature is less than 100°C, which allows rapid start-up. These traits and the ability to rapidly change power output are some of the characteristics that make the PEMFC the top candidate for automotive power applications.

Other advantages result from the electrolyte being a solid material, compared to a liquid. The sealing of the anode and cathode gases is simpler with a solid electrolyte, and therefore, less expensive to manufacture. The solid electrolyte is also more immune to difficulties with orientation and has less problems with corrosion, compared to many of the other electrolytes, thus leading to a longer cell and stack life.

One of the disadvantages of the PEMFC for some applications is that the operating temperature is low. Temperatures near 100°C are not high enough to perform useful cogeneration. Also, since the electrolyte is required to be saturated with water to operate optimally, careful control of the moisture of the anode and cathode streams is important.

Once fuel cells are commercialized, especially in automobiles, this type of fuel cell are ideal. These fuel cells have a high power density and can vary their output quickly to meet shifts in power demand.

Unitary Quantum Theory and a new source of energy

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The progress of Science goes on during every historical age, not only when men meditate on the whole, but when they concentrate their thoughts on such parts of the vast field of Science wherein developments . . . are needed at the given time.

James Clerk Maxwell (1831-1879)

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Following is a brief review of the book by chapters.

Chapter 1

The first chapter describes the general theoretical basis of the Unitary Quantum Theory (UQT). In the standard quantum theory, a microparticle is described with the help of a wave function with a probabilistic interpretation. This does not follow from the strict mathematical formalism of the nonrelativistic quantum theory, but is simply postulated. A particle is represented *as a point that is the source of a*

field, but cannot be reduced to the field itself and nothing can be said about its “structure” except with these vague words.

There is a school in physics, going back to William Clifford, A. Einstein, and Louis de Broglie, where a particle is represented as a cluster or packet of waves in a certain unified field. According to L. H. Germer’s classification, this is a ‘unitary’ approach.

The essence of this paradigm can be most clearly expressed in Albert Einstein’s own words: “*We could regard substance as those areas of space where a field is immense. From this point of view, a thrown stone is an area of immense field intensity moving at the stone’s speed. In such new physics there would be no place for substance and field, since field would be the only reality . . . and the laws of movement would automatically ensue from the laws of field.*”

The trouble with the many previous field unification attempts (L. de Broglie, Erwin Schrodinger, et al.) was in trying to construct a particle model from classical de Broglie waves, whose dispersion is such that the wave packet becomes blurred and spreads out over the whole of space. Moreover, the introduction of nonlinearity greatly complicates the task, and does not lead to a proper solution of the problem.

The UQT represents a particle as a bunched field (cluster) or a packet of partial waves with linear dispersion. Dispersion can be chosen in such a way that the wave packet would be periodically disappears and appears in movement, and the envelope of the process would coincide with the wave function. Based on this idea, a relativistic-invariant model of such a unitary quantum field theory was built.

In UQT, a particle is described with the help of a 32-component wave packet. The equation contains a 32x32 matrix dependent on 4-velocity. Limit transition of this equation leads strictly (!) to the relativistic Hamilton-Jacobi equation of classic mechanics, and in cases of especially low velocity (when all 4-velocity components are approaching zero), the UQT equation results in eight identical Dirac’s equations.

Further, the mass of the particle is naturally replaced in the equations by the integral of the bilinear field combination over its whole volume, producing a system of 32 nonlinear integral-differential equations, which in the scalar case allowed the authors to calculate to within 0.3% accuracy the non-dimensional electric charge and the fine structure constant.

Quantification of the electric charge emerges as a balance between dispersion and nonlinearity, as became clear from the physics point of view. Usually dispersion and nonlinearity bring about destruction of the wave packet but, for certain types of wave packet forms and amplitudes, mutual compensation of these processes is possible and the

packet periodically appears and disappears in movement at the de Broglie wavelength - yet its form is preserved.

A basic theory of microparticle-to-‘macrodevice’ interaction has been laid. The probability interpretation of the wave function is now not *postulated*, like it was earlier, but follows strictly from the mathematical formalism of the theory.

This approach makes the unitary quantum theory absolutely illuminating. For example, the tunnel effect completely loses its mysteriousness in the following way: when a particle approaches a potential barrier in such a phase that the amplitude of the wave packet is small, all the equations become linear, and the particle does not even “notice” the barrier.

During another phase, when the packet amplitude is large, nonlinear interaction begins, and it can be reflected. The particle birth and disintegration mechanisms become entirely understandable as the splitting-up of the wave packets. This UQT approach regards all interactions and processes only as a result of mutual diffraction and interference of such wave packets between one another, due to nonlinearity.

Chapter 2

The second chapter concerns the approximate equation of an isolated particle with an oscillating charge. Initially, this equation was developed on the basis of UQT heuristic considerations, but later it was derived directly from the Schrodinger equation for very low energies.

The equation describes the behavior of micro-particles in certain problems as classical particles whose charge oscillates and is dependent in a complicated way on time, speed, and coordinates. In such a paradigm, the tunnel effect also depends on the wave function phase, which was earlier a superfluous parameter in the standard quantum theory, since only the square of the wave function modulus had a physical sense and the phase did not affect it.

With the new paradigm, the situation is different. If a particle approaches a high potential barrier in a phase when its charge is very small, the repellent force is also small. It can overcome the barrier by climbing it, while in another phase it will rebound. Such an equation was applied to standard quantum-mechanical problems such as particle scattering, the tunnel effect, harmonious oscillators, and the J. Kepler problem for individual particles. Some analytical solution and modeling methods were also studied, since the equation with the oscillating charge had introduced a number of problems into the method of mathematical computation.

What was found most unexpected and intriguing is the absence of energy and impulse conservation laws for an isolated particle when its behavior is described with the help of the oscillating charge

equation, since it has no translation invariance. To be more precise, such invariance exists only when so called initial phase – a new controllable parameter introduced in UQT- takes the values divisible by π (3.14169). This means that in some cases the conservation laws are valid but in general does not.

A look at the origin of fundamental conservation laws for self-contained mechanical systems shows that they follow from the Newtonian equations [references to thermodynamics have no relevance whatever, because they are postulated therefrom], but the latter themselves follow from quantum-mechanical equations, which are of an even more fundamental character.

The standard quantum theory for isolated processes can predict only the probability of this or that event, and so there are no conservation laws for isolated events. They appear only in cases of transition to classical mechanics, when very large numbers of particles are summed over. The conservation laws appear in the macrocosm in a similar way to that in UQT. But now the existence of *controllable initial phase* opens up a number of wonderful vistas in science and technology - especially in energy.

Chapter 3

Next, we will examine the application of the oscillating charge equation for interpreting rich experimental material, which doesn't fit into the framework of standard quantum-mechanical science. For instance, Unitary Quantum Theory made it possible to predict [9] in 1983 the phenomenon of cold nuclear fusion, discovered only later in 1989.

This is a totally unexpected opportunity for creating nuclear reactions requiring very small energy values. One obstacle to the most probable *d-d* reaction under the normal very low energy conditions is presented by a very high Coulomb barrier. In UQT, the deuteron (as calculations show) can overcome that barrier with a certain value of the initial phase.

Several phenomena, essentially implausible by current science, will be analyzed on the basis of solving the harmonic oscillator problem (as well as certain others):

- Anomalous heat production in cold nuclear fusion reactions (when nuclear reaction products are millions of times less numerous than is required to explain the thermal effects);
- cold nuclear transmutation;
- production of superfluous thermal energy in numerous cavity installations;
- sources of excess energy based on anomalous gas discharge;
- mysterious processes of electric current passage through quantum wires, and the possibility of creating new

electronic devices utilizing a completely new electronic flow control principle based on the dependence of the tunnel effect upon the initial phase;

- a number of exotic energy sources, as well as experimental phenomena absolutely unexplainable by current scientific methods.

Chapter 4

Chapter 4 is a brief review of a theory and general approach addressing the 'problem' of chemical catalysis. By and large, how to resolve somewhat difficult issues that exist in this field today remains absolutely unclear, as it is not understood at all where the additional energy for certain chemical reactions comes from.

Chemical reactions of polysaccharide decomposition (lysozyme) are known which disrupt connection with energies of up to 3 eV. For water decomposition, a three-times-weaker connection has to be broken.

If such a water-decomposing catalyst is found (and the UQT can offer steps in the right direction), it could bring about a revolutionary change in energy for motor transportation.

There are reports that such catalysts have already been found: an automobile operating on simple water without requiring any additional energy is being tested in Japan.

Many catalysis theories conceal energy *shortage*, and are unable to "make both ends meet", since practically all existing science is built on conservation laws which have heretofore been regarded as unshakeable. The constant progress of scientific knowledge leads, however, to limited applicability of these fundamental laws.

Nature already plays tricks with humanity's best physical laws: consider for now just the weak interactions 'issue', and the chaos it caused in physics. The existing Newtonian conservation laws are a few of the things that survived that chaos, and it is only natural that they resist the influence of subsequent scientific developments.

We would like to remind the reader that the standard quantum theory predicts only a probability for isolated events and that there are no conservation laws that apply to them.

That is why, in order to create an inexhaustible source of energy, we merely have to collect events with the required result, such as for power generation, and then all the energy requirements of humanity could be solved by a method completely friendly to the environment.

The broad-scale usage of such technologies in the future would eliminate the problem of environmental heat pollution. The UQT, unlike standard quantum theory, offers a way to accomplish the goal of clean, efficient, and virtually limitless energy for our future.

Ether-Energy-Generator

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Colourful figures and diagrams can be found at the author's site
<http://www.evert.de/eft723e.htm>



Prof. Alfred Evert

Preliminary Remark

One aim of earning Free Energy is to tap unlimited sea of energy of universe. There is talked about space-energy, zero-point-energy, vacuum-energy etc. - however these terms are contradicting by themselves: space is abstract term (which can not content energy), zero-heat implies zero-energy (if thought by particles as common understanding), within vacuum no forces can affect (because real vacuum excludes everything). It's true: whole universe is full of energy - however "energy" again is totally abstract term, empty of real content.

Real however is, within universe exists only that One, that unique substance of ether - and this ether continuously is in motions most complex. If these - real-mechanical - movements of real-material ether should be used for drawing off energy, these movements are to manipulate in adequate manner. Naturally there is no energy to win, only for short phases forces are to divert for some profit (while sum of all energies naturally keeps constant).

Many explorers made numberless experiments and many generators are known, which - at least sometimes - did produce clear surplus of energy. Some use turning constructional elements for

energy-production or as trigger. Final aim however is solution without moving parts, thus solid-state-generators. In principle, these machines are build for accumulating frequencies of (previous space-, zeropoint-, vacuum-energy, or real) ether, building up swinging motions within oscillating circuits, lastly transformed into optimum usable shape of electric energy.

These constructions are built by normal electronic parts with known functions and characteristics. Explorers search for best circuits and optimum timing of elements. Obviously are coming up effects, nevertheless these machines got not ready for production and marketing. So it's obvious too, real causes for effects are not known, thus no conscious design is possible.

I don't understand much about electronics and at first, I don't want to know much of known knowledge, in order to be able to think free (and naturally some ideas most naive will result). However I try to explain appearances of radiation, electrons, charges, electric flow etc. by my understanding of ether and based at these insights to design sensible conceptions.

Following sections of this workout are to read by these preliminaries. These considerations are my contribution for solution and might be, some specialist, explorer or experimenter gets valuable hints for integration of these aspects into his conceptions. Following sections at first are simple descriptions of some aspects for gathering ether movements, as basis for further considerations.

Energy-gathering Antenna

Numberless waves or radiation lashes down onto surface of earth, naturally or man-made by diverse transmitters, a real mess of motions.

We can detect directly only appearances of light or also of gravity. Communication units for example can filter certain frequencies out of jumbled reception by complex techniques. If however most possible energy of incoming swinging motions should be used, no filter is demanded but chaos must be structured.

Antenna serves for reception of electromagnetic waves. These are built by electric conductor, around which swinging motions lean on resp. run alongside. At each end of wire, wave turns on its head and runs back. If wave lengths and wire length correspond, swinging motions are built up. If most possible wave lengths are to gather that kind, many wires should be used.

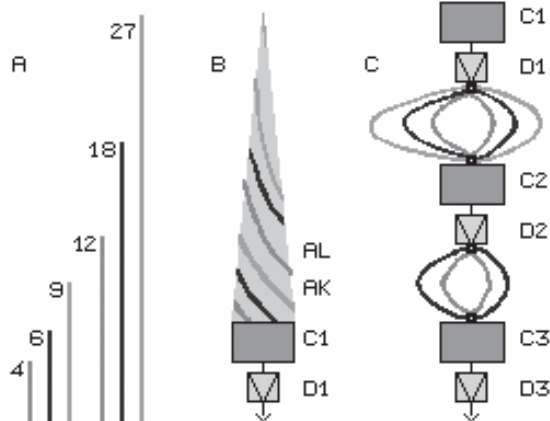


Fig. 1

On Fig. 1 at A schematic is shown a bundle of these antenna-conductors. Lengths should show systematic order. Some will use golden-section, other will take most important knots of global-scaling. I would prefer rule of 2/3 with 2- and 3- and even 4-fold, because by my understanding, universal frequencies of ether are structured by this pattern (details see Ether-Physics and Philosophy) and also radiations have to swing most resonant to these basic relations.

So antenna wires should show lengths in relation of 4-6-9 and 12-18-27 (or in addition of 36-54-81 and even of 108-162-243), as integer multiplication of essential constants of nature or known wave lengths.

Like schematic sketched at this picture at B, whole bundle of antenna-wires (AL, German Antennen-Leiter) should be used, e.g. spirally wound around an antenna-core (AK, grey) of dielectricum. Tesla for example had mounted rather long and rather thick antenna at his legendary car.

Ends of conductors are to combine by well shaped connection e.g. to short copper pipe or even better to a sphere (C1). Via diode (D1) swinging motions are guided further down and back-swinging is eliminated.

Surface of previous sphere represents a capacity, practically a capacitor (C1), however with only one surface, e.g. without contrary pole. These constructional elements are to build e.g. by copper and surface could be protected by dielectricum. This constructional element is called “capacity-surface” at the following (opposite to normal dipole-capacitor).

At this picture at C now schematic is shown further way of incoming swinging motions. A row of diodes (here e.g. D1, D2 and D3) should be installed. Probably capacity-surfaces (here e.g. C1, C2 and C3) should be installed between. Between these elements, swinging motions should be allowed to move at diverse ways of differing lengths (here marked by different colours and different long curves), where lengths again should be arranged systematic. Between two diodes, swinging can run ahead and back, at all wires same time.

At entrance of each diode occur different situations, depending on actual overlays, resulting compensation or addition of two, some or even many frequencies that very moment. Diode should be controlled by threshold value (e.g. Zener-Diodes), so only strong signals come to next circuit.

Now, swinging motions passing a diode, no longer show its original frequency. Energy of each swinging motion involved however is added into energy of signal. Within each further circuit thus come less, same time stronger swinging motions.

However these swinging motions come into next circuit not by certain tact, thus waves

there run un-regular. In order to strengthen order, at each further circuit should be used less connecting wires, like here schematic marked between C2 and C3.

At the other hand, no complete steady swinging is demanded, if signals of constant frequency are not necessary input for consumers. At last level e.g. could be installed diode with rather high threshold value, allowing strong signal to enter last capacity-surface (here not drawn). At this surface, signal runs around resp. becomes even spread charge (e.g. for periodic supply of consumer).

Within air (and term of air-ether is avoided) swirl numberless swinging motions, i.e. huge amount of energy exists - however force-less because of absolute chaotic overlays of all actual motions and their vectors. By previous principle, some order is to install within chaos, so reasonable amount of energy becomes usable.

Energy-suction by Permanentmagnet

Generator for producing electric flow in principle is build by rotor and stator. At most simple case are installed permanentmagnet within rotor and coil within stator (or several of). Normally both elements move relative to each other at surface of cylinder. At some of previous mentioned experiments resp. generators these elements are arranged at circled surfaces. Here now surface between elements is shaped like jacket of truncated cone (practical compromise between cylinder and circle surfaces).

On Fig. 2 at A schematic is shown cross section of that unit. Within housing (here not drawn) is beard turnably a shaft with its rotor (RO, light-red) in shape of truncated cone. Outside at rotor are installed permanentmagnets, their north poles (N) showing outward (thus all south poles S showing inward towards shaft).

Stator (ST) has corresponding shape of truncated cone, only with some larger diameter. At stator could be installed coils (SP, German Spule, at picture left side), however with windings radial showing outward (so axis of coil-core shows into tangential direction).

Only wires inside, opposite to north poles are effective. So it would be sufficient resp. better, if only a bundle of parallel wires (DL, German Diagonale Leiter, at picture right side) would be installed at stator. All upper ends of bundle are connected and all ends downside are connected. Each bundle of diagonal conductors (DL) upside is connected with source of charge (LQ, German Ladungsquelle, defined later) and bundle downside is connected with consumer (VB, German Verbraucher).

At B schematic is shown jacket (at plane level) of truncated cone (grey), alongside which elements move relative to each other. Permanentmagnets are long-stretched, north pole (N, blue) is long rectangle, its longitudinal axis showing into radial direction. Here as an example are drawn three permanentmagnets.

At this jacket-surface are also drawn three conductors (DL, red) of stator. These wires (resp. bundle of wires) are arranged some diagonal, outside-down showing ahead in turning sense (here some overdrawn). So

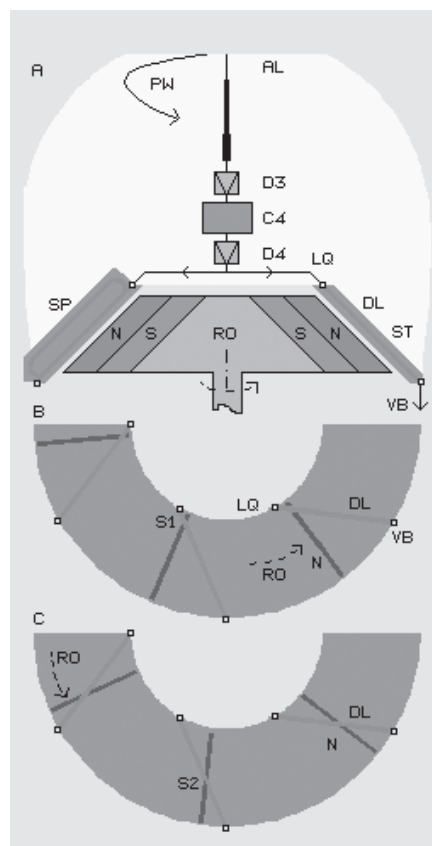


Fig. 2

between north pole (arranged in straight-radial direction) and conductors (arranged some diagonal) is angle of some degrees.

This angle naturally could also be achieved by north pole arranged little bit diagonal. North pole and conductor thus will never come into completely congruent position, there come up only points of intersection (e.g. at S1, German Schnittpunkt), which are more or less long depending on angle between elements.

While turning of rotor (RO) north poles wander alongside jacket of truncated cone. At C situation is shown, where rotor did turn some ahead (in comparison with situation at B). Point of intersection (S2) now is positioned some outward.

Special property of this concept is, relative speed between north pole and conductor increases as point of intersection moves from inside towards outside. (This effect also occurs if magnets and coils are installed at circled surfaces, however not paid attention to at known generators).

Function of magnets at generator is, at first to generate charge onto conductors and second to impress motion-ahead onto charge. Both acts demand work and above this, induced flow produces opposite magnetic field. Again work is necessary to overcome forces of attraction. Now here, magnet comes not abruptly and into complete congruent position with conductors. Separation of both elements occurs smoothly, thus with less resistance. Above this, demanded workload essentially is to reduce, if at entrance of conductor already charge is existing.

This source of charges (LQ, German Ladungsquelle) schematic is marked at this picture upside at A. Upside of generator, here are sketched previous antenna conductors (AL). Via diode (D3) swinging motions comes onto capacity-surface (C4), swinging further on at this surface as motion pattern of charge.

Following diode (D4) now is to control that kind, charge can flow into conductors (DL) of generator, short time before that conductor is

crossed by north pole. Magnets thus no longer have to attach charges onto wires, but only have to affect additional impulse-ahead onto charges already moving ahead. Point of intersection moving ahead by increasing speed, thus practically builds up bow-wave of increasing speed - by most few workload.

Antenna serves like a hollow, into which motion-energy of all incoming swinging disperses. Analogue to tornado (where air escapes upside out of funnel) or analogue to water-whirl (if water downside at centre steady gets lost) one can imagine, whole ether of wide environment builds up a potential-vortex (PW, German Potentialwirbel, marked by yellow "cloud").

Real processes are these: each swinging occurs into all directions of space same time, at radiations with additional impressed motion-ahead. There is all times a component of motion, trembling into radial direction of antenna, to and fro. From all directions, motions are running towards antenna, which is protecting versus all motions of each contrary direction (from backside of antenna), i.e. back-trembling (outward from antenna) becomes weaker. That's why swinging motions become attached at antenna and run alongside its surface.

If now previous generator takes off swinging motions from antenna on and on, motion-components towards outside of antenna again become weaker. Thus also at swinging motions further outside, motions into direction towards antenna become superior in strength. Thus this generator sucks in more swinging-energy than would be available without that (backward-affecting) change of motion's structures.

Motion-components radial towards antenna, within ether can not run parallel (because there are no gaps within, thus no density can increase), but only at spiral tracks. Resulting of is previous mentioned potential-vortex, which now by itself overlays additional incoming swinging, thus this vortex affects with strong order-function. Onto conductor of antenna thus hit ether motions already better structured. By previous mentioned ways of diode-cascade well are to coordinate swinging motions of high energy, which lastly are available at capacity-surface as pattern of charge.

This generator delivers pulsating direct current. As a variation, previous diagonal conductors (DL) could also be wound by loops around truncated cone (like previous coils with outward showing windings (SP), however as steady twisted bundle, practically a spiral coil). Also two conductor-circuits could be build, delivering phasewise shifted flow in contrary direction, thus usable like alternating current. In general however, this solution is not real optimum, even this generator works much better than common generators. Here still electric flow is produced by mechanical work. Source of charges here is produced by ether-energy, impulse-ahead however not jet is produced automatic.

Energy-Funnel Flat-Coil

Previous rotor shows typical characteristic of motion of our commonly known material world: material of shaft moves rather slow within space, material outside at rotor move by much faster speed. This fast motion runs within resting environment, where free movable parts (e.g. of air) mediate differences of speeds easy. Ether does not know parts, whole ether is gapless coherent. That's why typical processes of motions within ether are characterized by relative resting ether outside and most activity of motion can only come up inside near centre (details see e.g. Potential-Vortex-Cloud of Ether-Physics and Philosophy). By this point of view, previous rotor is not really ether-adequate constructional element.

On Fig. 3 now is shown element rather ether-adequate, at A in shape of simple spiral. This spiral is made of electric conducting material, e.g. by copper-wire. This spiral should be winded loosely, wire should not be isolated, distances should be fixed with most few material. Looking downward at spiral, it should turn inward-left.

At B this spiral is sketched by cross sectional view. At outer end, conductor should be connected with antenna e.g. of previous design via diode (D4). This constructional element thus is called "antenna-spiral" (AS) or antenna-coil. Inner end of conductor guides to consumer (VB). Spiral should be build at one level (only for better understanding of conductor's way, spiral at picture is drawn some diagonal). Similar flat coils were used in early radio-receivers, Tesla did use similar coils by large dimensions.

At C now within previous antenna coil (red) is drawn second conductor (blue) also as a spiral. This second coil could be at same level like first coil or e.g. direct below of antenna-coil. Design at two levels is shown at picture at D by cross sectional view. Blue spiral is called "exciter-spiral" (ES) or exciter coil, because through this coil phasewise is send direct current.

If one believes in common science, electric flow runs by light-speed through wires. A flow-impulse thus shows same absolute speed outside of coil like inside of. From outside of spiral however, angles speed of that flow gets faster and faster to the centre.

Quite sure however is, flow within exciter coil induces flow within parallel wires of antenna coil running into same direction. So also induced flow will show increasing angles-speed towards inside of spiral.

Flow is charge moving ahead alongside surface of conductor (details see following section). Charge is ether movement. Ether does not know parts. So never exists sharp border of any movement within ether (opposite e.g. to previous rotor at its border as material appearance). Thus ether is in motion also far outside of conductor, synchronous to motion of charge resp. flow, only some weaker depending on distance from conductor.

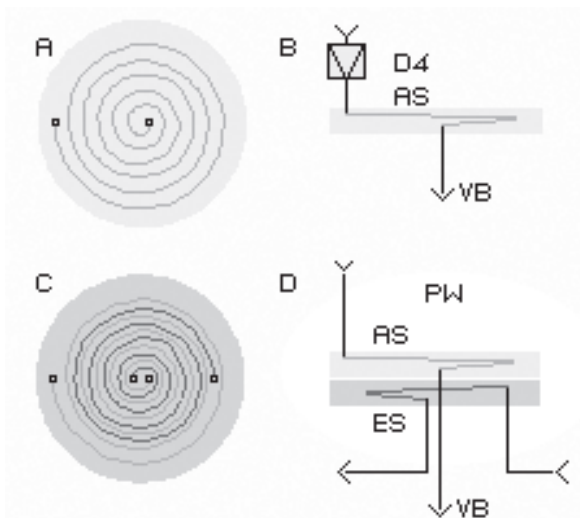


Fig. 3

This will mean, also ether upside of antenna coil is influenced by motion's component again of increasing intensity resp. angles speed towards centre. Thus exciter flow indirectly results potential-vortex (PW, schematic marked by yellow "cloud") within ether. Like any potential vortices, this pattern of motion produces self-dynamic with self-acceleration (e.g. well know at hurricanes etc.). Exciter coil must not drive this vortex steady, but short flow impulses will do, just because potential vortices run by itself on and on - and because this motion's pattern is absolutely typical for movements of ether within ether.

This intensive motion of Free Ether naturally affects back towards surface of conductor. So motion's pattern of charge are initiated resp. charge is accelerated into turning sense of spiral. Again, this moving charge running faster and faster inwards results suction effecting backward outside.

Analogue to previous suck-in also this antenna spiral will draw swinging motions off antenna attached at outer end of spiral. However now with this conception, mechanical work no longer is demanded, but short initiation momentum by pulsating direct current within exciter coil are sufficient input. Essential work of generating charges and influencing motion-ahead here is done automatic by mechanic of ether by itself - because these motion's pattern are totally adequate to properties of ether.

By the way: electric flow is produced - however nowhere corresponding energy got consumed. At tornado or water whirl, potential vortices are driven by higher static pressure outside - and that air pressure or water pressure in total keeps constant, no matter air or water is standing or moving. Only within vortices, static and dynamic pressures are different than outside of.

Born of short and only temporary order of motion's vectors (which by steady repeating can also be continuous), forces with usable effects can result of totally normal chaotic motions of air- or water-parts. Quite comparable are structuring processes of ether's motions described upside.

If large antenna coils are used, also other effects might occur. For example, ether motions could become visualized by smoke. Within large circles outside of coil, abnormal magnetic appearances could occur. Even levitation effects could come up (which however are no anti-gravity). At later sections, constructional version with less side-effects is shown. At first however, general characteristics of charges and flows and general energy-sources are to discuss.

Energy-Source Ether-Pressure

In 2003 and 2004 I described elementary motion's pattern of ether at Ether-Physics and -Philosophy. There in 2005 I will describe appearance of gravity and in 2006 of electromagnetism in details. In anticipation of, now are to mention only some relevant facts of.

Electrons are sphere-shaped motion systems by potential vortices. Radiation like photons is analogue pattern and their vortices-structures are wandering through space. Atoms are accumulations of these Potential-Vortex-Clouds. Material parts are accumulations of atoms. Outside of that Bounded Ether is Free Ether and that is relatively resting resp. only in motions of quant-small distances. Towards inside, motions of these vortices systems become wider. All motions all times are running into all three dimensions, so move at spiral-bended tracks, within Free Ether like within occurrences of Bounded Ether.

All appearances of Bounded Ether have an "aura", i.e. ether's movements don't end at fix borders but spread far out into surrounding ether. Within these intermediate zones thus smooth transition of small-scale to coarse motion structures exist. Total ether around such vortices systems is superior, its fine swinging presses onto coarse vortices clouds from all sides. At the one hand, tendency to accumulation of likely appearances results, at the other hand e.g. electrons are pressed towards conductor surface.

Surface of material bodies is "rough", because aura of atoms or their Potential-Vortex-Clouds reach out different lengths into space. Within these aura-depressions of material surfaces electrons can "hide", for example as

electrostatic charge. Only if surface is regular shaped these charges can come into motion by larger scale, i.e. electric flow can come up alongside conductor.

The more electrons sit at surface, the stronger is voltage (relative to conductor with less electrons attached). Lastly all vortices structures sitting at surface build one common layer of coordinated motions. If however layer got too thick (limit of capacity is exceeded), some motion's parts escape (or are broken off by external motion impulses). If now charge resp. electric flow should be manipulated, actions must fit to characteristics of their motion pattern.

On Fig. 4 properties of charge are shown schematic. Around electric conductor (EL, German elektrischer Leiter, grey) could sit separated electrons, at normal case however around conductor is attached complete charge-layer (LD, German Ladungsdecke, yellow), like a blanket or coat. This ether in principle is in motion all times into all directions. So all times motion components exist into longitudinal direction (LB, German Langsrichtung) and around conductor as cross-motion (QB, German Querbewegung). As long as no flow is running, both motions are relatively steady trembling ahead and back (if only these two motion's directions are looked at).

Longitudinal motion commonly is called "electric field", motion-around conductor, cross to longitudinal motion, commonly is called "magnetic field". Field is pure abstract term, appearances however totally concrete are based on totally real motions of real substance called ether. Pattern of motion of previous charge coat schematic is shown at this picture at B.

Observed is an ether-point (AP, German Atherpunkt), i.e. one certain portion of ether is looked at while moving. This point is only fictive position within ether, in sense of geometric point. This point is no separated particle, because all ether is gapless matter, is real continuum, not dividable into any parts with fix borders.

All ether points thus are connected most direct manner with all neighbours. There can't exist

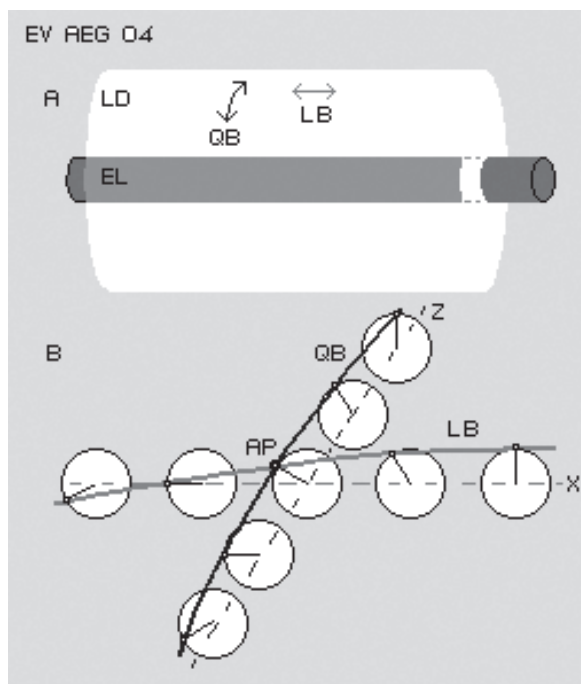


Fig. 4

any motion like by billiard-spheres, where any motion runs into a gap between others. If one ether point is moving in space, all others has to move synchronous and each motion into one direction demands balancing motion cross to.

At this picture as an example schematic is shown longitudinal motion (LB) of five ether points (AP resp. small black marks). These ether points are connected fix resp. rigid, here represented by red curve (of each neighbouring ether points). At X-axis (dotted line) are drawn five left-turning clocks, each watch-hand shifted by 30 degrees (showing into directions from 12- to 8-o'clock). At ends of each hand observed ether points are positioned.

If now all clocks turn synchronous, motion towards left comes up. However, clock quite left side already shows 8-o'clock, i.e. there motion already is running to right side. Distances between ether points thus would not be constant - resp. can keep constant only if same time motion cross to comes up - and it must be exactly right-angled - like phenomenal property of all electromagnetic appearances - by common understanding not to explain.

Here for example that ether point quite left side should have to turn around X-axis by balancing

motion. Then however, all other ether points should have to move synchronous to, i.e. all clock-hands can not turn only at one plane.

Starting from central ether point (AP), this cross-motion (QB) of Z-axis is marked analogue (all clocks turning likely in this plane right angle to X-axis). So there is steady turning and winding and swinging into all three dimensions same time (changing values of Y-axis are represented by direction of each clock-hand). Naturally also layers upside and downside of these observed ether points swing analogue and synchronous (again with correspondingly shifted positions of each clock-hands). Complete coat of charge around conductor is swinging by that motion's pattern.

On Fig. 5 at A schematic is drawn an alternating current generator (WG, German Wechselstromgenerator) and a consumer (VB) and two conducting wires between. Generator at first has to bring charge onto conductors, thus must build up previous charge layer. This layer, by previous considerations, is swinging ahead and back into all directions, Thus also one component of motion is trembling into longitudinal direction (LB). By common frequency of 50 swinging motions each second, generator is shifting charge to and fro, at both conductor wires. This motion of flow (SB, German Strombewegung) is overlaying normal longitudinal motion (LB).

Common understanding is, electric flow should move by light speed through good conductor (through solid material, not alongside its surface, by common understanding). While one phase of 0.02 seconds light comes ahead 6.000 km far. AC-generator near source of Rhein thus has to push flow until mouth of Rhein and back again. Really however, at conductors of that length, all energy got lost in resistance, at end of conductor no flow will exist at all.

Real cause of resistance is, AC-generator is steady impressing motion ahead onto normal swinging of charge layer, into one direction and 0.02 seconds later into opposite direction. At process of electric flow, no ether is really moving ahead. Its normal turning only is overlaid by second turning. Only seemingly results flowing-ahead (see further down resp. chapter Sea-

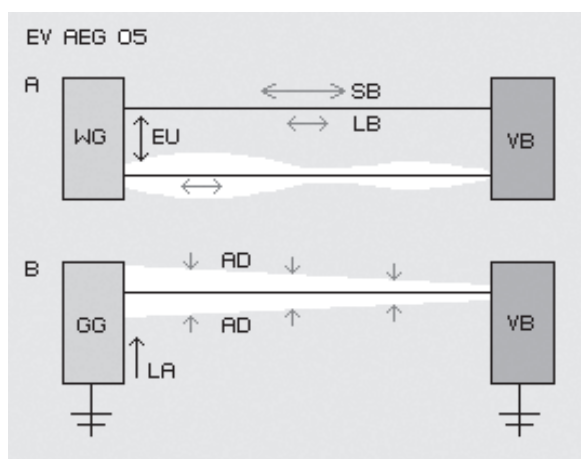


Fig. 5

Waves at Ether-Physics and Philosophy: waves are running ahead for miles - apparently, really however waters are rotating only at relative small distances, only by differing speeds ahead and back, resulting of overlay of only two circle motions).

If this generator accelerated charge in longitudinal direction, same time and same amount motion right-angled to have to be accelerated (because electric and magnetic fields correlate inevitably). Next moment, motions are decelerated and again accelerated into opposite direction, thus previous overlay is completely to change. All layers of all charges must change directions and speeds of all movements synchronously. Charge layer has no fixed border, thus also all surrounding ether is involved correspondingly.

Essential property of ether is its inertia: as all ether points correlate to each other in absolutely direct manner (with no smallest gap between nor any possibility of differing density), all motions structures unavoidable has tendency to resist versus any changes. So AC absolutely is enemy of ether. Charge layer once send onto conductor naturally is deformed by steady to and fro and naturally some parts of charges got radiated into environment. Naturally AC-generators can only transform energy (EU, German Energie-Umsetzung) from one shape into other - by enormous losses.

At this picture at B is drawn analogue configuration, now however with direct current generator (GG, German Gleichstrom-

generator) and only one conductor wire to consumer (VB). Backward wire is not necessary, both units can be connected with ground. Generator has to work only for accumulating charge (LA), i.e. must guide most possible thick charge layer onto conductor. Rest is done automatic by ether's work.

Each normal DC-generator builds up charge. By previous proposals was shown how swinging motions of natural source are to use by proper construction of antenna, how mechanical work can be improved by rotating magnets or how charges are to suck-in via flat coils by pure electronic measures of exciter coil. Already at these applications, ether-pressure has essential affect. Now for flow of DC alongside surface of conductor, ether pressure (AD at previous picture) is unique driving force.

Generator only generates charge at conductor, at its best only pulsating, most effective in shape of previous piling-up bow-wave. Charge layer thus is essentially higher at the beginning of conductor than at its end. Within area of bow-wave movements are relative intensive, i.e. aura reaches far out into Free Ether. Within this intermediate zone, thus wide scale motion's differences are to balance.

All ether motions probably are of same speed everywhere (light speed or multiple of). At Free Ether motion run within small area, comparable with small swinging at end of a rope. At opposite end of that rope, at charge layer, swinging motions are of larger scale. Short swinging will be congruent to long swinging some times, afterwards however contrary. Long swinging can escape that contrary motion only by wandering to opposite end (towards conductor). Long swinging is not really decelerated by that act, because short moment later is driven by motion of Free Ether now actually into same direction.

This example points out function of Free Ether Pressure. This force naturally affects much stronger onto thick layer of charge with corresponding wide aura than onto parts of conductor with less charge. Free Ether presses flat any charge-accumulations - by ravenous speed alongside whole conductor, by minimum resistance, also at long distances.

That pressing-flatten same time impresses motion-ahead onto previous general pattern of motions of charge layers. As any acceleration of that electric field same time affects acceleration of inevitable cross-motion, intensity of that Bounded Ether gets stronger as a whole. That's why DC shows dramatic less resistance than AC.

Each new bow-wave of pulsating DC enters into that motion's pattern heated-up resp. is really pulled in. At DC all motions all time run into same direction. Ether shows property of inertia - of motion. Indeed, ether nowhere ever can be stopped. Any motion once initiated, e.g. overlay into direction-ahead (all times inclusive correspondingly accelerated cross-motion), thus goes on affecting ahead - however same time ether some behind is forced to corresponding acceleration (only of smaller scale depending on distance). So also this suction-effect is elementary property of ether - if assumed gapless and without possibility of changing density (without these necessities of motions of flowing charges, no induction would be possible). So for transport of charge at a conductor, pulsating DC is most effective procedure.

This ether-pressure permanently affects onto all coarse ether-vortices. We don't feel it (like fish doesn't feel water-pressure or we don't feel air-pressure), because our atoms are swinging sufficiently resonant to Free Ether motions. Well known experiment demonstrates enormous power of: strong impulse of electric flow is send through bundle of thin wires (flex). Normally likely electrons should have to blow up that net of wires. Really however these wires got crumpled-up - visual result of ether-pressure onto thick charge layers around wires (where wires of that bundle mutually protect each other, thus got pressed together).

Ether pressure also gets obvious if charge got too thick resp. charge is pressed outward at spikes of surface in shape of sparks (where free electrons are pressed to sphere-shaped potential-vortex-clouds, just by that pressure all around, so from continuous layer of charge got born separated units). If barrage of ether-pressure results heavy motion of atoms of conductor, parts of charge are spilled out also

in shape of photons (no particles, but only wandering vortices pattern of ether motions).

This enormous energy of ether pressure is for free and should be usable. Most effective would be, not to consume this primary charge. That charge should only run around within system by pulsating acts. Only secondary appearances should serve consumers.

Pulsating Circuit

At first again, solution with mechanical control by rotating parts is shown, using example of Electric-Dynamo. Here once more is mentioned only essential principle of process. Three capacity-surfaces are used. Their capacity varies as intermediately parts of surfaces are protected versus ether pressure by dielectricum. Depending on material of dielectricum, capacity of likely surfaces can vary by multiple.

Dielectrikum (DI, white) here is shaped as rotating beam, capacity-surfaces (CU, blue) are build by sheet copper in shape of circled sectors. If dielectricum is turning, one surface becomes less covered while following surface becomes more covered correspondingly. Different blue colours at this animation show each varying capacity of charges.

All three capacity-surfaces are connected by three wires (blue) in turn. If dielectricum turns left, charge moves from one surface to next each right side (so charges remain within system all times). These three wires are guided via transformer (TR) as primary coil, thus phase-shifted induced secondary flow (red) is available for consumers (VB).

Similar machines were build and did work (e.g. by Hyde), however these systems did work with common capacitors (with each two dipole-surfaces) and charges had to act via air (like at most electrostatic units). However, one does not need dipoles and no protons - if these particles would really exist. Principle shown here does work only with negative charges of more or less volume at surfaces of varying capacity. Charges keep all times at good conductive surfaces, only by differing strengths of charge-layer.

If charge actually is open for Free Ether pressure, charge layer there is pressed flat and thick charge layer is pressed into gap between next capacity-surface and dielectricum actually covering that surface. Free Ether pressure can affect only via narrow surfaces aside, just like demonstrated by Casimir-effect. No rejection of likely electrons exists in reality, however motion's pattern of charges build capacity-layers decisive stronger within protected areas than outside of.

Rotor naturally is to drive by motor. However, no magnetic contrary forces are to overcome like at common generators, but maximum forces likely to Coulomb-force will come up. Thus energy input will be some tenth of induced current (what some explorers achieved by similar units, however only for some times because machines were not built consequently ether-adequate).

Naturally all capacity-surfaces are to charge by maximum when starting machine (by external

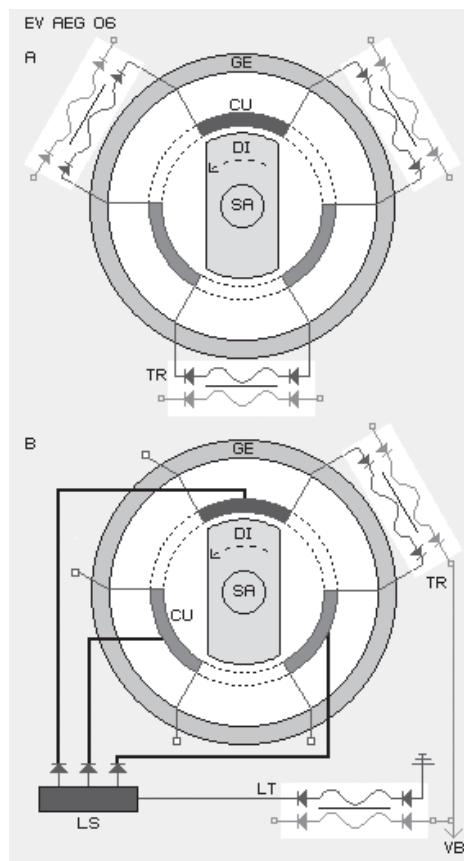


Fig. 6

source resp. battery). Naturally also in running mode, some amount of charge gets lost by radiation into Free Ether (and e.g. Tilley called isolation of his generator most important problem), thus permanent recharging is necessary, however only by small amount.

Here on Fig. 6 at B schematic is shown concept of autonomous running system. Some components at A here are not drawn, some others added.

From current available to consumer (VB), one part is guided into charge-transformer (LT, German Ladungstrafo) as primary coil (red) and induced secondary current (blue) is guided into storage for recharging (LS, German Speicher für Ladung). From this capacity, charge flows to previous three capacity-surfaces (CU) via conductive wires here marked by thick black lines. Naturally these connections are to install as one-ways by diodes. Charge really will flow only occasionally for refreshing of surfaces (only if these surfaces actually show less capacity resp. corresponding few voltage).

At this constructional principle thus enormous power of ether pressure affects pulsating direct current running around, while rotating dielectricum all times produces new gradients, each from surface of decreasing capacity to following surface of increasing capacity. This process is controlled mechanical (thus no pure solid-state solution), nevertheless this control is simple like safe operating.

Even similar (however not consequent constructed) electrostatic units did work successful (however not stabile but e.g. weather-dependant), I can not understand why since one year nobody did realize this proposal of electrostatic-dynamo. Probably name of this concept is misleading: not electro-static here is affecting but pure electro-dynamic, this machine is really an electro-dynamo. Perhaps previous detailed description of function of ether pressure now will help understanding this clear solution.

Magnet-Pump

Electric current is overlay of static charge, thus overlay of ether motion by ether motion. Basic

principle of processes already is described by Ether-Physics and -Philosophy, for example at chapter 03.03 Overlays. Here on Fig. 7 that process schematic is shown once more.

Ether is in complex motion at tracks, resulting of addition of different circle motions. Over simplistic one could imagine, an ether point (AP) at its process in time is turning around fulcrum (D1, German Drehpunkt) by radius (R1), like marked at A by diverse positions, turning left assumed.

Overlay comes up as at the end of this radius (R1) new fulcrum (D2) exists, around which additional turning by radius (R2) occurs (like marked at B by two positions). So two clocks are turning within space, where outer end of outer clock-hand marks track of ether point.

If both turnings run synchronous, wave-track (WB, German Wellenbahn, blue curve at C) results, i.e. like sea waves really are running. One water-point moves fast ahead upside (here towards left) and moves back slowly downside (to see by distances of different lengths of ways within likely time units). Separated water parts rest within relative small area, while wave appears far running ahead.

Analogue to this process, ether all times is positioned within relative small area, turning at only narrow circled tracks, which however are enlarged by overlays (depending on relation of radius of overlaid turning motion) and thus shows different speeds within different phases.

Analogue to discussed motions of previous Fig. 4 neighbouring ether points move at likely tracks, where however each clock-hand is at some correspondingly shifted position. At wave's top, both clock-hands show upward, i.e. water stands high and motions towards left side add to high speed. Further back at place of actual wave's valley, water surface is some deeper and motions of both clock-hands subtract to slower motion backward right side.

Opposite to water, ether is homogeneous gapless substance. There is no place to pile up masses, i.e. there is no place for motions running ahead - unless ether previous positioned there would escape aside (and all neighbours behave

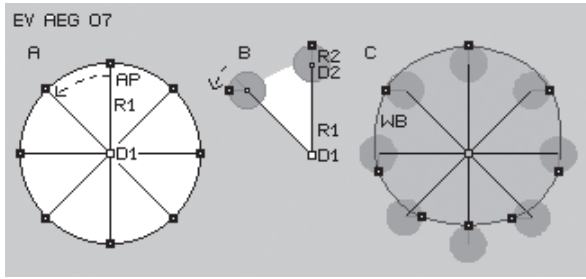


Fig. 7

correspondingly, by wide detour back to observed wave's hill).

Also this fact was discussed already on previous Fig. 4: each swinging into longitudinal direction inevitably is bound to synchronous swinging right angles to. Within ether, there is no water surface, i.e. all ether upside like downside of observed position must swing synchronous. Only at very long distances (really by astronomic relations, e.g. like within galaxies or atoms), radius of overlays can decrease, i.e. motion can come back to circled track (resp. to swinging pattern of Free Ether).

Essential insight is: at electric current no ether is really moving ahead (and no electrons are crawling ahead within conductors and really no particles are moving at all). Impression of flow only appears based on varying turning speeds of relative stationary ether. Rule-of-right-hand (by conventional understanding of current's direction) exists concerning electric flow, thus analogue to right-turning thread (while here all times real direction of current is assumed). So in reality, current flows all times at spiral tracks, showing left (by view into flow's direction). Current flows not like at common thread with constant gradient, but faster ahead (and correspondingly faster cross to) and some slower, depending on phases of overlaying turning motions.

Ether by itself never moves ahead far out. What really does wander far ahead however is structure of motion's pattern: overlay by itself is built up within generator and only that additional turning motion is running alongside conductor (so only motion's pattern is wandering from one portion of ether to next, not ether by itself is wandering in space). Ether

positioned in front takes motion of overlay and ether positioned behind comes back to its original motion pattern.

This process is comparable to short gust of wind, which builds up one (or some few) sea waves. Waves run ahead and get lost by friction of water parts. Gapless ether is much more viscous than water. Building up an overlay costs relative strong power, because same time must be build up far reaching corresponding balancing motions. At the other hand, within homogenous ether are no losses by friction, so overlaid motion's pattern can spread unrestrained.

Analogue to flow of electric current behave field-lines of permanent magnets, like schematic shown on Fig. 8 at A by example of rod magnet. Material of magnet is arranged that kind, ether between material parts (resp. between special motion's pattern of that Bounded Ether) is overlaid by corresponding pattern.

That motion's pattern exits and transmits into space ahead of north pole. However, there are no separated field-lines, but that pattern again is coherent layer of synchronous, however some phase-shifted swinging of all neighbouring ether points. So there exists also component of longitudinal motion (LB) plus cross motion (QB) inevitably (analogue to previous mentioned pattern on Fig. 4).

Field lines exit at north pole and flee back to south pole. This area here is rough sketched by yellow region (different strength of field etc. is well known). Permanent magnets can work astonishing long times, however their areas of affect are rather limited. This appearance clearly marks effect of ether pressure.

Free Ether presses versus all coarse motion's structures resp. eliminates all appearances which are not sufficient resonant to universal basic ether motion. Obviously these magnetic field lines are not sufficient adequate, so are dispersed by Free Ether already at short distances.

That magnetic motion has chance to survive some longer e.g. when fleeing into narrow positioned piece of iron, which inside can take

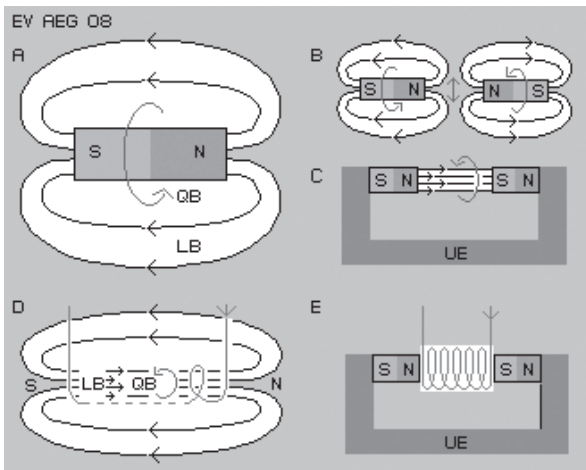


Fig. 8

corresponding overlaying motions. This motion's pattern exits this protection area at other end of iron, so there again is exposed to Free Ether. Pressure onto that new north pole now pushes iron towards north pole of magnet. So there exist no attracting forces but pressure of Free Ether versus coarse motion's pattern affects this appearance.

Permanent magnet is also good example of previous mentioned suction-effect of ether. Magnetic motion pattern is build up inside of magnet. This overlay can not come up and end abruptly, on contrary, ether already in front of south pole must show corresponding pattern, and thus balancing area must exist. Magnetic strength clearly shows, how intensity of overlay-impression comes up into axial direction towards south pole.

Coming from north pole, ether is moving by likely pattern. That's why field lines from north to south pole tie together resp. why magnetic field lines are closed loops in general. Magnetic field alongside rod of magnet is rather inhomogeneous because Free Ether at this area can eliminate different strength of overlaying motions.

Rather homogeneous however is magnetic field direct in front of north pole. If however two north poles (like shown at B) are positioned opposite, motion's directions (longitudinal like cross to) are contrary. Ether can not take contrary motions within short distances –

that's why likely poles reject. Again: there are no separated field lines struggling but two coherent layers of mirrored pattern need distance to balance differences.

Relative homogenous magnet field exists between poles of horseshoe magnets (like schematic shown at C). Motion pattern exists from north pole, runs via air gap to south pole, and there is exposed to pressure of Free Ether only at outer sides. Within U-shaped iron (UE, German U-formiges Eisen) motion pattern flows back to north pole, protected by iron material's structure (while electric flow sufficiently is protected already at outer surface of conductors).

Magnet field analogue to rod magnet exists within coil when electric flow runs through (like schematic sketched at D). Outside of coil, magnet field again is rather inhomogeneous, while inside of coil longitudinal like cross motions (LB and QB) are homogenous. Motion pattern of electric flow around conductive wires build up common motions-layer alongside total inner surface of cylinder. Now it's good idea to combine both congruent appearances (like schematic shown at E). Coil is winded (without iron core) around air gap between poles of horseshoe magnet. So magnetic flow supports motion of electric flow and vice versa. Both magnetic fields (yellow) add their affects. Field keeps homogenous even distance between poles is much larger than at normal arrangements.

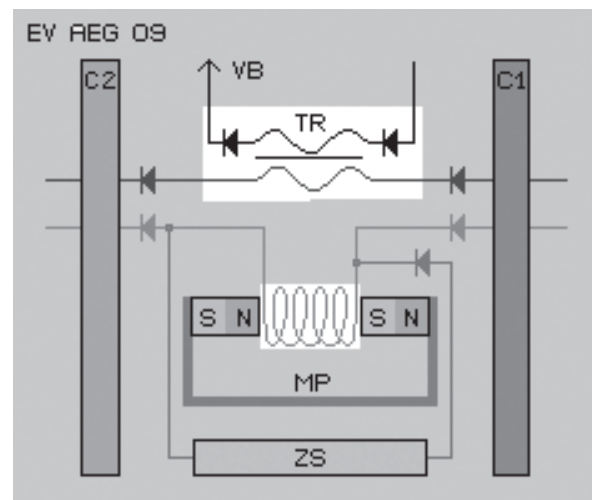


Fig. 9

An application of that magnet-pump (MP) is shown on Fig. 9. At example of previous Electro-Dynamo was mentioned, charges of capacity-surfaces (C1 and C2) should be used and charges should remain within system all times. If one capacity-surface actually has more charge (here C1, dark blue) than an other capacity-surface (here C2, light blue) electric current runs via conductive wire (blue) until both capacitors take likely charges. If this wire is arranged as primary coil of transformer (TR), secondary coil (black) induces current usable for consumers (VB).

Now here is installed additional connection between both capacity-surfaces (from C1 to C2). This second conductive wire (red) is guided via previous magnet-pump (MP).

It's know, balancing of charges lastly affects likely amount of charges at both capacitors. It's also known, first current will over-spill, thus more than half of charge-difference is flowing to the other side (and easy to explain by previous description of inertia of ether and its once started motions).

Spilling-back is to avoid by diodes. In order to achieve continuous process, each delivering surface must be pumped out at its best for next phase. Above this upside was mentioned, overlaying motion-ahead by itself could run on and on. At the other hand, forces are demanded if motions got stopped and must be restarted. These problems could be solved by following circuit.

If capacity-surface left side can take no more charge, flow existing at red wire still can go on running via green conductive wire into intermediate storage (ZS, German Zwischenspeicher). From there, green wire leads back to coil of magnet-pump, while direction of flow again is controlled by diodes. Current now can go on within that loop, at this phase driven resp. at least supported by magnetic field of horseshoe magnet. However, there is no current generated nor magnet and conductive wire are moving relative to each other.

Opposite this will mean, still existing flow affects previous mentioned suction-effect back

onto capacity-surface C1. From there thus still charges are drawn off and guided into intermediate storage ZS.

If sufficient gradient between both capacity-surfaces thus is achieved, within next phase charges could spill-back (from C2 to C1). However it's much better to use three capacity-surfaces and current is running all time into same direction. Each one surface delivers charge to second receiving capacity-surface, while third surface is pumped-off.

Charge within intermediate storage or running around within intermediate circuit (green), at least by parts will wander into receiving surface at next phase. Within area of red circuit overlaying motion-ahead keeps constant to a great extent, i.e. at start of next phase abruptly will run strong flow into receiving surface. These phases are to control electronic via voltages between capacity-surfaces (probably much harder to construct than simple mechanic controlling of previous Electro-Dynamo). It's also question whether voltage-differences can be build up in larger scale (e.g. for supplying normal consumers). This application however is good example for handling charges and currents most ether-adequate. And this conception is important hint for following solution of real solid-state machine with performances you like it.

Variation of this conception is sketched on Fig. 10. Instead of permanent magnet here magnetic

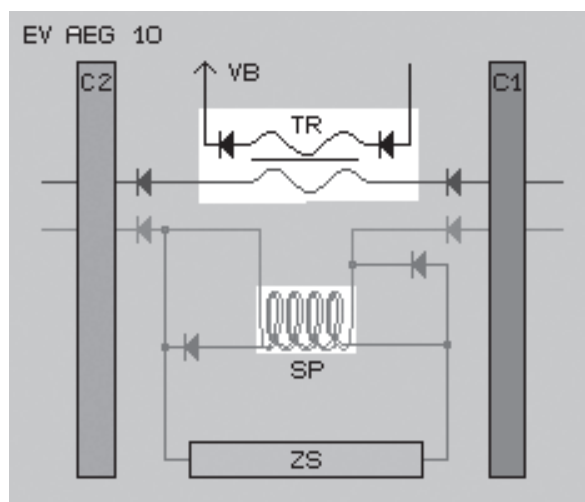


Fig. 10

field is produced by coil. This coil-pump (SP, German Spulen-Pumpe) at the one hand exists of coil (red) of current between capacity-surfaces (from C1 to C2). At the other hand coil of secondary circuit exists (green), which is running via previous intermediate storage (ZS).

If current flows between capacity-surfaces, current within side-circuit is induced and thus intermediate storage is loaded. If primary current ends, motion's pattern still keeps constant as current is going on within side-circuit. Again each direction of currents is to control via diodes.

Spiral-Cascade

Objectives of all previous circuits was to use current between capacity-surfaces for induction of secondary current available for consumers. These currents however demand, not only balancing of charges between both surfaces, but to pump-off delivering surface at its best (so gradient of voltages is produced for next phase).

At previous concepts thus additional current-circuits were installed with embedded permanent magnets or coils. Now best solution would be, ether by itself would do that job direct manner.

On Fig. 11 only one conductive wire (blue) is drawn between capacity-surfaces (C1 and C2).

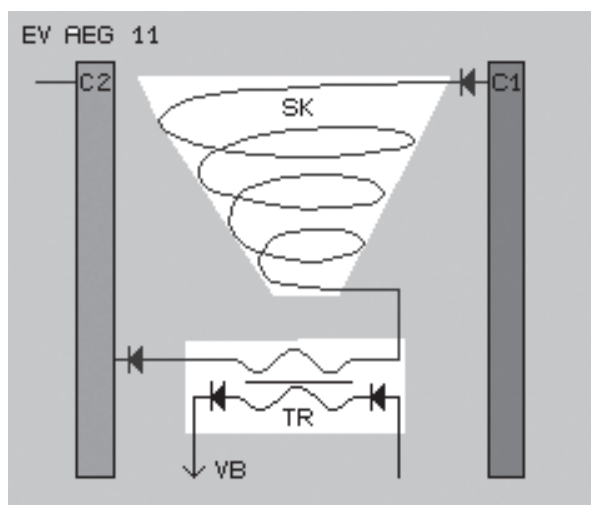


Fig. 11

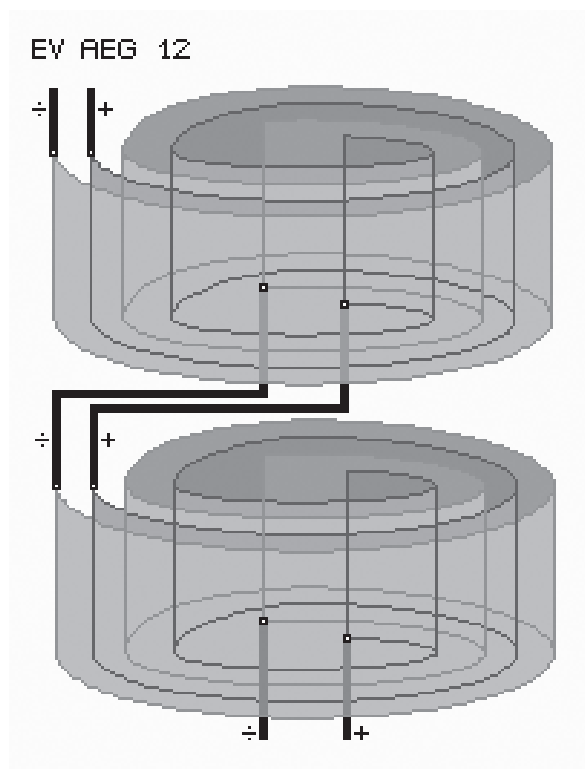


Fig. 12

Via transformer (TR) usable current for consumers (VB) is induced like at previous solutions. Most effective shift of charges now however is to achieve, if current is guided via spiral-cone-shaped conductor (SK, German Spiral-Kegel). This concept is similar to flat-coil of upside Fig. 3, here however windings are not arranged at one level but alongside surface of truncated cone.

Effect of electron- or ion-cascade is known by special arrangement of conductors, like used e.g. at Testatika. Fig. 12 shows construction in principle.

Sheets of capacitor are wined spiral. One sheet takes negative charge (red), on surface takes positive charge (blue), between both sheets isolating material is installed (here not drawn). Several of such units are arranged one by one, where each inner end of sheet is connected with outer beginning of next corresponding sheet (here marked by thick black lines).

When discharging that capacitor-cascade, more electrons exit than originally put into system and "ionization" is detected. Both

effects however are only side-appearances, process by itself exclusively is based on pressure of Free Ether onto charges resp. overlaying motion ahead of current. Above this, no normal capacitor (-dipoles) nor isolation are necessary. Much more effect will show naked surfaces or wires (here thus only minus-sheets) which are exposed to Free Ether directly.

Ether is moving by light speed (at its local limited areas) and electric current can also move (approximately) by light speed (apparently ahead). Nevertheless, differences of lengths alongside spiral bended surfaces are important. Layer of charge show basic pattern of motions onto which is impressed overlaying motion-ahead (and synchronously also cross to), both by certain speeds.

At inner side of spiral, distances become shorter and space becomes narrower, i.e. ether there comes into stress-situations. Resulting of is thicker layer of charges at inner parts of surfaces. Free Ether affects stronger pressure into these thicker balancing areas, i.e. also with accelerating effect. Relative to length of conductor thus current will flow (apparently ahead) faster and faster towards inside of spiral. Alongside bended sheet-surfaces, charge layer will slip ahead increasingly faster. At round wire-surfaces, motions wind around-ahead correspondingly faster.

On Fig. 13 schematic is drawn such an acceleration-cascade, where conductive wire (red) is winded spiral and its negative charge resp. current runs through three of these truncated cones one by one (A, B and C). At the end of that unit, not more electrons appear, but charge there is impressed by overlaying motion much stronger and faster into direction ahead.

Within such coil-cones for example is piling up accelerated bow-wave with corresponding inertia into direction-ahead, however also with corresponding suction-effect into backward direction. Previous mentioned pump-effect thus is generated by this conception, now however only by direct affecting pressure of Free Ether onto charge-layer.

So it's important, Free Ether can affect most free onto charge layers, i.e. these coils should

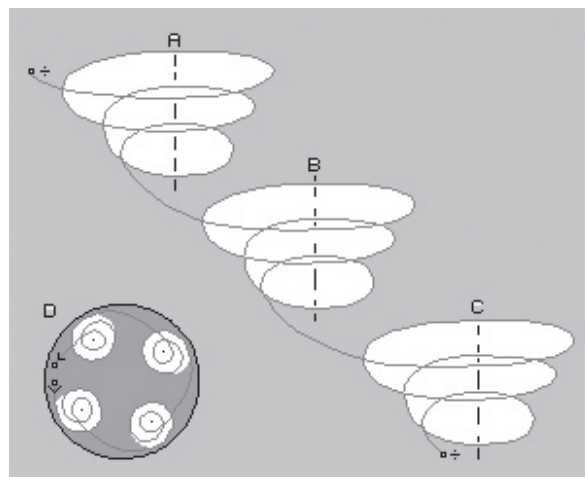


Fig. 13

be winded loose. Such units could be built by large scale or several of these coil-cones could be installed within small box, like e.g. sketched at this picture at D by view top-down (four coil-cones at different levels are arranged within box of not-conductive material). This current now should be allowed to fall into depression.

Charge-Depression

It's common understanding, current is caused by voltage-difference between negative and positive. Commonly observed are number of electrons and protons and their movements caused by rejection of likely and attraction of unlike poles. These are secondary appearances, if real existent at all.

Free electrons can attach at conductors and are integrated into common layer of charge. Only when pushed or hit out of that layer, this package of motion again will become sphere-shaped ball of certain motion pattern and volume (pressed in shape by surrounding ether of all sides, like universal ether also moving towards left in general).

Naturally some times might be broken out off common layer also false turning pattern, however these protons won't survive long time. If colliding with electrons, both contrary overlays are eliminated (and motions disperse into Free Ether).

There remains a gap without specific motions, into which naturally other electrons or protons

can fall. This violent and disturbing reaction however is not identical with wanted continuous flow of charges alongside of conductors. So at the follow, again only more or less charge (layer of negative electrons) at conductors is assumed and discussed.

Charge layer can be impressed motion-ahead into one or contrary direction of conductor. Impressing overlaying motion can be done by workload (like at all common techniques) or effects of ether motion by itself can be used (like discussed here). Especially impressive example of pressure of Free Ether onto charges is well known Faraday-cup, like schematic shown on Fig. 14 at A.

Metallic ball (red) with isolating rod (grey) is charged by any source (here not drawn) and put to inner side of metal-cup (C2, dark blue), which itself stands at isolating support (here not drawn). Charge layer (yellow) of ball moves to surface of cup. Inside of cup, pressure of Free

Ether (AD, German Ather-Druck) is mirrored, pressing flat charge layer (light blue). Charge flows at outer surfaces of cup (where only normal ether pressure exists).

Pressure inside of cup is strong enough to press charges at most high points completely off, i.e. ball is to take off cup discharged in total. If this process is repeated, cup outside shows higher voltage than originally existing at source.

This experiment of electro-static is well known. Instead of process step by step, effect also will work continuously, like schematic shown at B. From source of charge resp. current (C1) is installed a connection to inner bottom of cup by isolating conductor (IL, red plus grey, German Isolierter Leiter). Original charge layer (marked yellow) is pressed alongside inner surface of cup and build up much larger and stronger charge layer (light blue) at outer side of cup. Naturally this pressure also affects back alongside conductive wire. Flowing ahead however will be continuous, if charge of outer surface steady (or phasewise) is guided to consumers (VB).

At this picture at C alternative design of that depression for charge resp. current is shown. Conductive wire here is not guided through inner side of cup to its bottom. Isolated conductor (IL) from source of charge (C1) now is guided direct through bottom (well isolated) and outer surface of wire is in contact with inner surface of this bell. Conductive wire thus practically is transformed to a hollow conductor (well known is, inside of exist no fields at all). Here however this pipe (C2) opens like a funnel, so charges are pressed outside (and further on guided to consumers). This constructional element at the following is called capacity-bell.

Downside at the middle at D, contact between conductor and bell is sketched by cross sectional view. Conductive wire for example is split into two contacting surfaces, so there is room for charge layer to flow off bottom of bell. By previous spiral-truncated-cone was demonstrated how charge becomes overlaid by accelerated motion ahead by ether-conform building up of a potential vortex, inclusive self-acceleration and suction-effect. By this

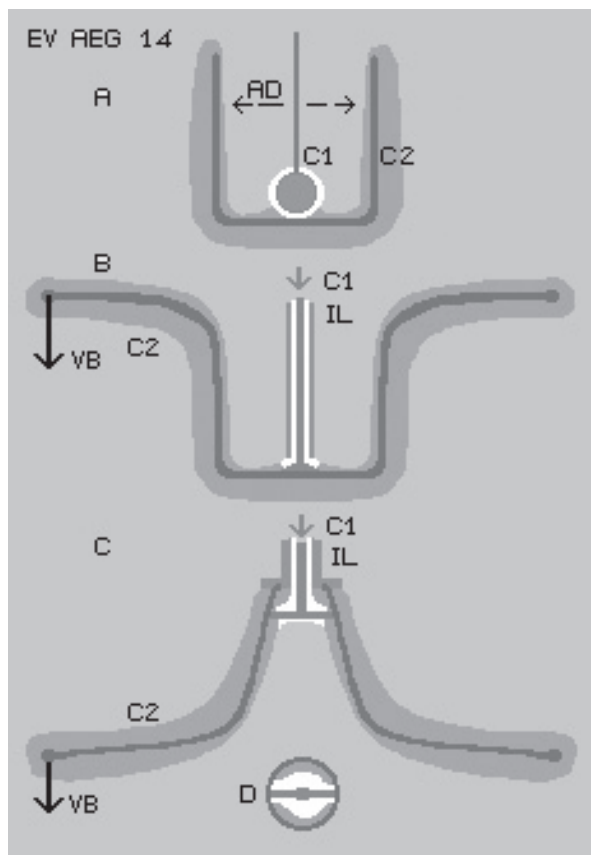


Fig. 14

example of Faraday-cup (in adequate shape) was demonstrated how ether pressure accelerates charge layer towards outer surfaces and thus charge-depression is organized. From source to that depression, further charges can follow (so current is achieved), where charges won't get lost, but are still available for further usage.

Ether-Current-Generator

It's correct to assume, ether in total is full of energy in shape of various motions. With its small-scale universal movement's pattern, Free Ether affects pressure onto all motion-pattern of more coarse scale. Some of these appearances of Bounded Ether well can exist long term, if sufficient resonant to basic pattern. Some motion's pattern can wander through space and e.g. hit onto earth in shape of radiation various kind. These swinging motions should be usable in shape of electric current if handling and constructional elements are organized ether-conform.

On Fig. 15 at B schematic is shown design of ether-current-generator, where previous constructional elements are combined as an example. As source for swinging motions resp. charges is used an antenna-unit (AT). Via spiral-truncated-cone (SK) charge gets overlaid by accelerating motion inside-ahead. Via capacity-bells (C1, C2 and C3) charge is guided to bell's outside surfaces. From there, current is guided direct into ground (at C1) or to consumers (VB) (at C2 and C3).

Antenna (AT) could be rod-antenna (like discussed upside or like Tesla did use at his famous car). For stationary mode, antenna naturally could also be sphere-shaped (at its surface any frequencies are running around and easy to catch, even by chance). Diodes should be installed at the end of antenna unit (or some diodes with intermediate capacity-surfaces could be used, like e.g. discussed upside on Fig. 1), so swinging motions further on are directed ahead.

Here is drawn only one spiral-truncated-cone (SK). Naturally could be used also real cascade of these units (corresponding to upside Fig. 13). These conductor-spirals result acceleration-

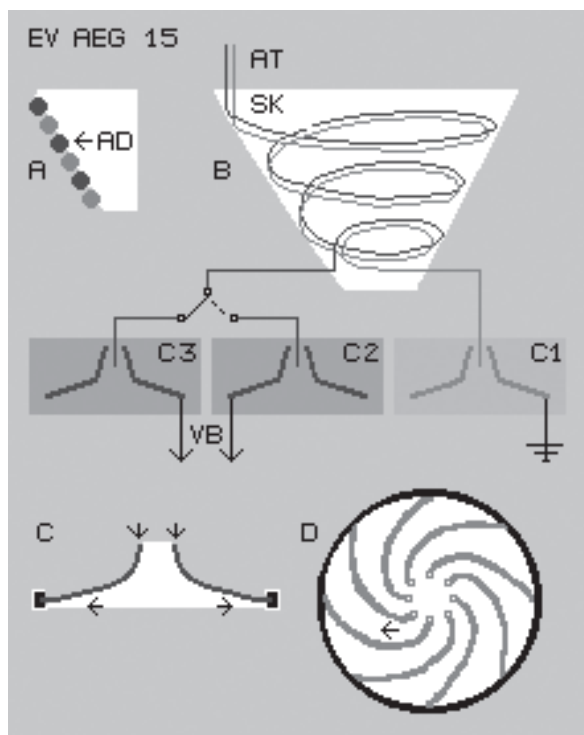


Fig. 15

effect as mentioned upside. In addition, these units affect structuring function onto various overlaying swinging motions. At each inner side of cone, previous mentioned stress within ether comes up. Space for balancing motion's areas becomes narrow, i.e. no longer can take place any actually incoming contrary or phase-shifted swinging motions. These various frequencies are forced to bundles of more uniform motion's pattern. Structuring force is most strong, because gapless ether can not move abruptly into contrary direction without corresponding wide balancing areas (in really astronomic relations).

Nevertheless: ether motion can not only be pushed into that funnel. There must exist additional suction (while suction within ether is even more essential than at normal fluid processes). That suction is produced by previous capacity-bell, which here simply is sketched e.g. as C1. Continuously that unit sucks in charges, if charge accumulated at bell's outer surface can flow off free.

This primary-circuit here is represented by red conductive wires. This part of construction destroys energy of ether-swinging motions.

This part of energy can not be used direct kind, only side-effect of this process serves as motor for usage of other part of motion's energies - here called electric current.

At previous spiral-truncated-cone (SK), parallel to red coil is drawn blue winding of conductive wire. Both wires are positioned narrow together, like sketched by sectional view at A. Especially at inner surfaces strong ether pressure (AD) affects. Current within primary conductor (red) naturally initiates corresponding current within parallel running secondary conductor (blue), like well known by any induction.

Primary charge layer now is moving not only around red wire, but at inner surface of that cone common layer of charge comes up. Overlay of motion-ahead of one conductor (red) thus is transferred also onto second conductor (blue). This process works best at most even common surfaces, thus by most thin wires. At the other hand well could be used square conductors (with rounded edges), where each inner side of wires together build common plane (but spiral-cone-shaped) surface.

Only at the end of truncated cone (it must not be complete cone!) red and blue conductor wires are guided at separated directions. Red circuit ends within earth resp. is grounded, like discussed upside.

Blue conductor is also guided into capacity-bells (C2 and C3) and further on to consumers. Consumers have to do any workload, thus resistance comes up. In order to keep ether-motion (resp. current induced within spiral-truncated-cone) continuous, that current is guided phasewise into one (C2) and second (C3) capacity-bell.

Opposite to all previous concepts, here charge is guided alternating into two constructional elements, thus available for consumers by corresponding phases, e.g. for charging batteries etc. (here not discussed in details).

Special design of these Faraday-cups allows introducing charge inside of bells, even at their outer surfaces existing actual higher voltages (thus constructional element of most

important function). These bells not at all must be build by plane surfaces, also constructions analogue to Faraday-cage are useful (however cage open at one side), like schematic sketched at C by longitudinal view and at D by cross-sectional view.

It will make sense not to use only two conductors but bundle of wires (of red and blue functions). Within spiral-truncated-cone, these wires build relative homogenous surface, where charge layer at inner surface is especially important. Nevertheless, current runs alongside wire's outer surfaces. At following constructional element, charge has to be pressed alongside inner surfaces of bell to its border.

This effect is also achieved, if shape of bell is build only by separated wires showing outwards. Common surface of wire-bundle (inside of previous truncated cone) thus gets broken up and charges now build layers around each separated wire. All charges are likely, all current motions are likely, i.e. with contrary movements towards each neighbouring wire. It's clear thus rejection occurs, i.e. charges escape to border of that wire-spider.

At outer border, all wires are connected to a ring (bell's common border) as relative large capacity surface. Wires must not show accurate radial towards outside. If conductors are arranged spiral, distance between neighbouring wires increases slower, i.e. ether pressure between wires affects stronger and longer. This bell build be separated wires probably will work better than bell with continuous surfaces.

I'll end this section with a provocative assumption: Tesla did use this solution at his famous car. Sure knowledge only is, rather large and thick antenna was installed and for starting usable energy, two rods were pushed into any black-box. If previous conductive circuits between spiral-truncated-cone (SK) and capacity bells (C1 resp. C2 and C3) are open, nothing will happen. If however capacity-bell C1 comes into contact with red wires (first rod pushed into black-box), primary current gets started and gets running into ground (without direct usage, but only as motor for induction). If capacity-bells (C2 and C3) are connected

with blue circuit (second rod pushed into black-box), usable current runs into batteries (and both clocks well could be mounted at one axis).

Summary

There are lots of (more or less) working units for usage of space-energy. These machines are based on known functions of electric and electronic constructional elements. Common considerations are based at common understanding of electrons, protons and electric current. However, only if real essence of electricity gets known, machines are to design consequently and will work steady.

All appearances are expression of ether and its movements. Only if ether is assumed to be gapless unique matter, inevitably must exist right-angled synchronous movements. Only by that understanding of ether, besides others, affects of magnetic and electric fields are to explain (and no other theory explains this elementary phenomenon).

Charge is not identical to single electrons, but is complete layer of motion pattern at surface of conductors. This relative coarse motion is pressed towards surfaces by much finer motion pattern of Free Ether (superior part of all ether). Current comes up by overlaying of motion-ahead. By common techniques this process is done by workload (thus only transforming one shape of energy into other shape, including losses). Free Ether affects current automatic, as thick layers of charges are pressed flat until equal spreading.

Motion's layer also comes up at surfaces of antenna by input of radiations. These ether layers swing by different rhythm of incoming frequencies, thus multiply overlaid. Better order resp. simpler structure is to achieve by different ways between capacity-surfaces.

These swinging motions become flowing motion only if depression exists. That's to achieve e.g. by flat-coil, where charge is steady accelerated towards inside-ahead by second coil (as triggering motor). This acceleration is also to achieve by usage of magnets, which increasingly faster move cross to conductor.

This process builds up ahead-running bow-wave, which however affects also backward practically as suction, based at relative strong (motions-) inertia of all ether movements.

Depression area is to achieve very effective, if actual capacity of capacitors varies (and capacitors are constructed as capacity-surfaces without dipole-function). At Electro-Dynamo for example this is achieved by dielectricum passing by capacity-surfaces. Charges stay within system all times, however current between capacity-surfaces induces secondary current available for consumers.

Charge can be pumped between capacity-surfaces (above normal balancing of charges) when using permanent magnets and additional circuits with coils and intermediate storages.

If however one wants to use pure ether energy, one has to catch charge by antenna systems (where sphere-shaped antenna are advantageous for stationary mode). Within spiral-cone-like winded coils, inner surfaces are exposed to pressure of Free Ether. At narrow inner sides affects higher ether pressure, by which acceleration of motion component ahead is achieved, so towards centre ether flows increasingly faster in relation to conductor (while ether really does not move ahead, but only actual movement's pattern wanders ahead-inside faster and faster). Potential vortices like these are essential movement's pattern of ether, inclusive its self-acceleration and suction-effect.

Real cascade of these spiral-cones are usable, so at the very end more current exists than originally available. At the following, common charge-layer of narrow parallel arranged wires are to split, so around each single wire charge layer comes up. Analogue to well known effect of Faraday-cup or -cage resp. simply based on known rejection, charge is pressed outward within such capacity-bells.

All charges at a whole are gathered at outer ring, again building closed layer of charge. Also this constructional element represents depression, because inside charge is to introduce at wires, even outside at ring much higher voltages exists. These capacity-bells by

itself represent variable capacities, increasing from inside towards outside, so are very important constructional elements.

Part of earned and accelerated charge is to spend by running direct into earth or grounded mass. Only as side-effect, induction within parallel coil of previous spiral-truncated-cone produces usable current. As an example, current alternating is available for consumers via two capacity-bells.

By these principles of manipulating forces of given ether movements usable electricity is to

achieve. Like this for example Tesla's car did work. Naturally many variations of previous discussed constructional elements and circuits are possible. Presenting these considerations I do hope, physicists like experimenters got interesting stimulations and I am looking forward for resonance. For example I am interesting to learn, if functions of many known units of diverse explorers could be explained by these considerations or rebuilds improved by these proposals do better job. Naturally I am very interested to learn about experiments with previous constructional elements (because I do no experiments by my own). Thanks in advance.

Steven Krivit's Cold Fusion

www.americanantigravity.com/krivit.shtml

Cold Fusion is a method for generating tremendous energy at room-temperature discovered by Martin Fleischmann and Stanley Pons in 1989. Typically, a palladium cathode is immersed in an electrolytic solution and subjected to a small electrical current, which is claimed to generate an excess heat-effect greater than the input energy, as well as limited fusion-byproducts in solute.

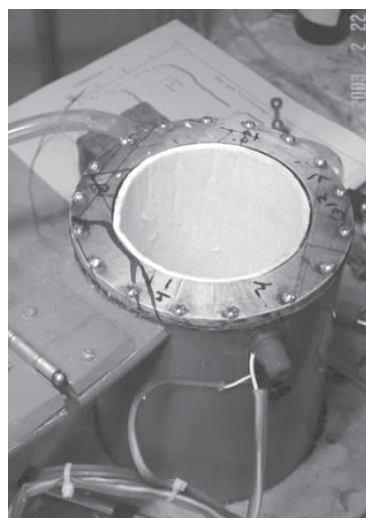
If fusion power becomes commercially viable, it has the potential to fulfill the world's energy needs, using ocean water as fuel, safely, without pollution or harmful nuclear waste. Credible researchers working for respectable laboratories around the world now say that cold fusion shows such potential.

Cold fusion beckons a new dawn in the age of scientific energy research. Neglected but not abandoned, cold fusion has made startling progress as a new field of nuclear science. The historical information contained in *The Rebirth of Cold Fusion* challenges the premise that science is always objective. It portrays the professional struggles that those who have explored this controversial subject have endured, and illuminates the blocks to innovation that academic institutions and publishers have posed.

Steven B. Krivit is the senior editor for *New Energy Times* and has been conducting investigative research into cold fusion and other *New Energy* topics since 2000. Krivit has earned the respect of the worldwide cold fusion community and is often consulted by the general media on the topic. He earned a bachelor's degree in business management from National



Steven B. Krivit and Nadine Winocur



Since the CF process creates excess heat, a calorimeter like this one by Dr. Storms is used for measuring output.

University in San Diego, California, and studied industrial design at the University of Bridgeport in Connecticut.

Nadine Winocur, Psy.D., is the managing editor for New Energy Times. In addition to her interests in New Energy, Winocur maintains a private psychotherapy practice and facilitates continuing education training in the field. Winocur earned her doctoral degree in psychology from Pepperdine University in Malibu, California.

Critical Acclaim by Arthur C. Clarke

"The neglect of cold fusion is one of the biggest scandals in the history of science. ... The Rebirth of Cold Fusion, by Steven B. Krivit and Nadine Winocur, takes a fresh look at this still unresolved debate. An unbiased reader finishing this book will sense that something strange and wonderful is happening at the 'fringes' of science. ... The future is almost unlimited. It can be the end of the fossil fuel age, ... and the end, incidentally, of many of our worries about global pollution and global warming. ... This book strengthens my hope." -Sir Arthur C. Clarke.

"Now I have little doubt that anomalous energy is being produced by several devices, some of which are on the market with a money back guarantee, while others are covered by patents. The literature on the subject is now enormous, and my confidence that 'new energy' is real slowly climbed to the 90th percentile and has now reached the 99% level. A Fellow of the Royal Society, also originally a skeptic, writes: 'There is now strong evidence for nuclear reactions in condensed matter at low temperature.' The problem, he adds, is that 'there is no theoretical basis for these claims, or rather there are too many conflicting theories.'" -Sir Arthur C. Clarke



Dr. Edmond Storms CF Electrolytic Reactors



Palladium Reactor. This photo shows a disassembled Cold-Fusion reaction chamber, including the anode and Palladium cathode



This laser-triggered device by Dennis Letts uses photons to help stabilize the Cold-Fusion reaction in solute!



A miley-style CF Reactor by Dr. Edmond Storms

News of our company

Our company Faraday Lab LTD is developing R&D on creating a 37-kW autonomous energy source on basis of 60kW electrogenerator GS-250 and a turbine of GTD-350 type (MI2 helicopter). The turbine's operation mode is about 10% of its maximum power capacity.

In 2005, our company purchased the main components of this electric power station from Degtiarev's plant (a generator, a reducer, and a turbine on the common chassis). At present time, we are working on completion, designing and production of a workable electric power station, which must provide 37 kW power output.

On the photo, a stage of the electric power station's testing in our lab with a load of 3kW is shown. An air source creates a small pressure of just 0.05 atm.

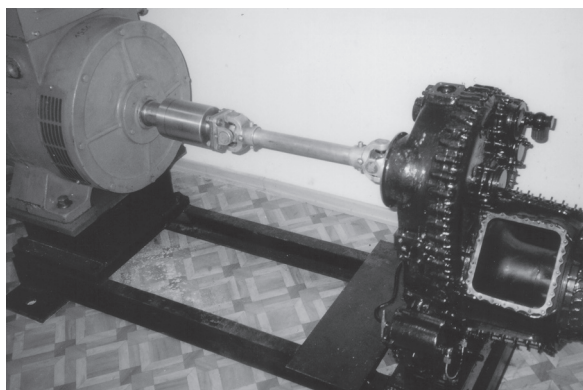
Further, we are planning to increase the pressure by 10 times and obtain the autonomous operation mode due to air vortex process' creation.

The demonstration for investors can be organized in Saint Petersburg, Russia.

You can read the discussion on the project and other news at our site www.faraday.ru.

We invite partners for development of this work and planning of joint production.

Our tel/fax is +7-812-380-3844.
Alexander V. Frolov
CEO and Chairman, Faraday Lab Ltd



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Humour Pages

Antigravity

Iakov Vedmark

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Published abridged

Did you ask yourself why people do not fly? Of course you did and not only once. Probably it happened in your early childhood when you looked at birds flying freely in the sky. Or it could happen in your youth when you followed airplanes. It is not important either way but if you have a question, you will get the answer.

People cannot fly like birds because they have no wings or any other parts which can hold the body in the air flows. Flying people do not exist, nor flying elephants, snakes or turtles. It is understandable. But why cannot people overcome gravitation laws by high-tech solutions and the production of aircrafts? We already have airplanes, rockets, and paraplans. So, why cannot we make flying saucers, automobiles, and bicycles, i.e. reliable, cheap, and ecologically clean devices? I suppose such research is being carried out and most likely coming to a triumphant end. But something is trying to keep it back as usual. You would ask, 'Who is doing this'? It is the same thing. It can be space intellect, aliens or the President.

It is inadmissible to solve this problem at this juncture of manhood's evolution because it will destroy the very manhood very quickly. Traumatism will increase in the sky a dozen times as there are almost no chances to survive an air crash. And there will be air crashes because people lack self-control and they will drive automobiles in a state of alcoholic intoxication. Besides, the human organism is not perfect at all. Thus, it is possible to imagine how dangerous moving in the sky will be.

Reasoning from the above-listed, we can make a conclusion that overcoming of the gravitation laws is possible just in case medicine is developed

fantastically on our planet because it is useless to hope for the perfection of human beings and their self-consciousness. First, we must learn how to change damaged parts of the human body for new ones quickly and well and only then we will be permitted to fly. Genetics, founder cells or something else most likely brings our civilization near our dream but now we must forget about free flying in the sky. The time has not come yet.

The editors kindly recommend our readers to visit this website for cheering up.

A physics lesson: Newton's law



Picture by Sergei Korsun
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