Free-Energy Research
of
Eric Dollard

A Collection of Contributions to
The Journal of Borderland Research

BORDERLAND SCIENCES

FUNCTIONAL THINKING: An Interview With Eric Dollard
by Tom Brown

Eric P. Dollard, Wireless Engineer, is a scientist who bases his work on observation of phenomenon and practical experimentation. He is the Vice-President of BSRF and the author of five published papers on electrical phenomena: CONDENSED INTRO TO TESLA TRANSFORMERS, DIELECTRIC AND MAGNETIC DISCHARGES IN ELECTRICAL WINDINGS, SYMBOLIC REPRESENTATION OF ALTERNATING WAVES, SYMBOLIC REPRESENTATION OF THE GENERALIZED ELECTRIC WAVE (IN TIME), and THE THEORY OF WIRELESS POWER. In the course of Eric's research he has investigated the works of Nikola Tesla, Charles Proteus Steinmetz, Philo Taylor Farnsworth II, Johann Sebastian Bach, Wilhelm Reich and other true Scientists of our era. I have personally witnessed the propagation of electricity without wires, the phenomenon of drawing several inch sparks off insulators and mysterious living forms in plasma gas bulbs connected to Eric's Tesla apparatus. Eric speaks a knowledge gained by hands on experience. This interview will certainly change your point of view about the Borderlands of Science and will certainly shatter any preconceived notions you once had about Tesla, Free Energy, ELF, The American Dream, etc.....

Tom: What first interested you in the works of Nikola Tesla and electrical engineering in general.

Eric: I've always been interested in the subject. Years ago someone gave me a copy of Co-Evolution Quarterly that had an article on Tesla, Philo Farnsworth and Edwin Armstrong. That got me thinking about what was going on as I had basically reinvented the Tesla coil as a teenager using equipment given to me by RCA. Things started to connect at that point. Then I read PRODIGAL GENIUS (by John O'Neill) and it was like I was hit with a bolt of lightning. That book shocked me into action.

T: What do you think that Tesla was trying to attempt in his work?

E: Its hard to sum that all up in one phrase.

T: Would the culmination be the transmission of electrical energy without wires?

E: That was part of his projects, using what could be called true single phase electricity, or mono-polar electricity. That's the key to his transmission of electrical and mechanical energy - to convert it to a single phase form.

T: Would you say that monopolar electricity is electromagnetic?

E: No, its anti-electromagnetic.

T: You mentioned Philo Farnsworth, what type of work was he doing?

E: Farnsworth built the multipactor tube, a secondary emission, negative resistance tube. It tends to take off when connected to apparatus such as a Tesla coil and exhibit electrical oscillations.

T: So, to use a catch-word of the day, it was a free energy device?

E: Yes, probably the only real free energy device that anyone ever demonstrated which can be reproduced.

T: Was there any relationship between the work of Tesla and that of Farnsworth?

E: They are really in totally opposite directions. Farnsworth was the high master of electronics...he was electronics. No one knew more about the electron than Farnsworth. Tesla was dealing with ether type forces that don't involve material or atomic particles, they involve something a little finer than that.

T: You have worked extensively with Tesla coils and we have published your books on the subject. What do you feel is the actual use of these apparatus?

E: As a transmitter-receiver device, for transmitting energy without transmission towers or large arrays of dipoles, or equivalent.

T: What is the medium for the transmission of energy if wires are not used?

E: Whatever the general media is around us, call it the ether, or air or you can transmit it through the ground. Basically it just flows. The Tesla system is designed to transmit through the ground. There's a lot of talk about propagating through the earth-ionosphere wave guide, which Tesla, in no way, shape or form envisioned. Most of his apparatus are for transmission through a common conducting medium and the earth is the best conducting medium available. The devices are one conductor electrical generators - just connect one terminal to the common conducting medium and all the other or terminal devices will receive the energy. There's no pairs of wires or wave guides to bound the energy. These are what are called unbounded waves. The Tesla Magnifying Transmitter is a converter which converts electromagnetic energy into what is called magneto-dielectric energy.

T: What exactly is the dielectric side of electricity?

E: The side of electricity that represents the faster than light phenomenon.

T: How does the dielectric relate to Reich's orgone energy?

E: Reich found that the orgone and the dielectric field are basically one and the same. If a dielectric field has the proper pulsations then you could almost call it the orgone energy. An example of this is the orgone accumulator, which is alternating layers of dielectric and reflecting material, like a capacitor. The reflecting is usually called the conducting in electrical engineering work but this is based on misconceptions from the 18th and 19th century with regards to how electricity flows. Its well known that electricity doesn't flow through wires, but that's the conception that most people carry around in their heads. Of course people used to think the earth was flat, too. Reich's dogma assumed that the insulating or dielectric material had to be organic, but of course he was using glass wool and its stretching the term organic by applying it to glass wool. You could say the glass wool is organic because the silicone dioxide has two atoms of oxygen, but that's not really true.

T: Have you found any evidence in your research relating the dielectric field to orgone energy?

E: Yes, the cosmic superimposition effect. If you take a low pressure gas (in a bulb) and place it in two superimposed dielectric fields then you get spiral formations such as Reich wrote about in his book COSMIC SUPERIMPOSITION. These formations appear as spheres, galaxies and other cosmic forms.

T: So the high voltage terminal of a properly built Tesla transmitter puts out a dielectric field?
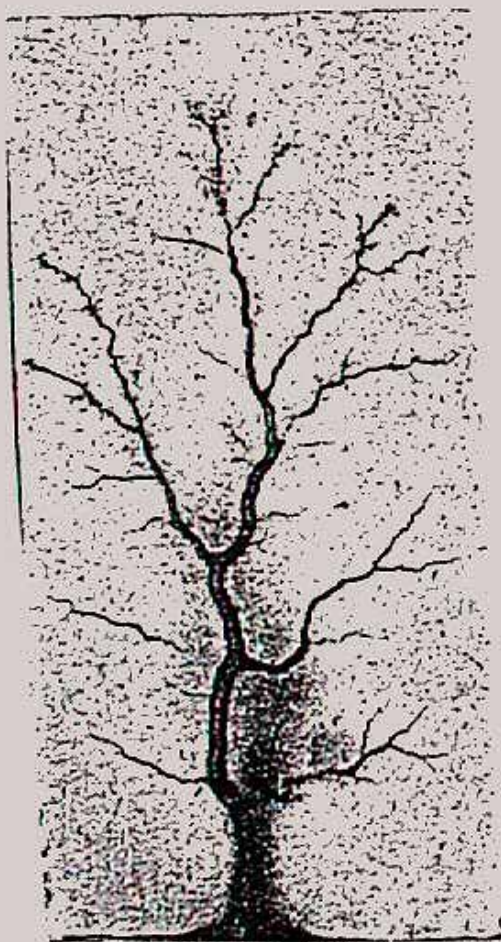
E: Right - a dielectric current - a current of many amperes flowing through free space without any electrons. This is a true electrical current.

T: Is this as you've demonstrated to me where you can draw a several inch spark off the insulator, which of course isn't supposed to happen?

E: Right, an insulator isn't supposed to conduct electricity so how can you draw a spark off of it? (laughter)

T: One thing I've noticed in these discharges is that they look like plants, like something organic, unlike regular discharges which look erratic and sparky. What explanation do you have for this?

E: Their shape is basically the Golden Ratio spiral. The log periodic spiral projecting out into space with all angles determined by the Golden Ratio. Now this is also the same shape that living objects form and you find that all discharges, in general, of potential energy will try to form this shape. You can see it in water patterns in sand and patterns in clouds in the sky. The patterns appear over and over and over again, just like the organic patterns burned into wood by the discharge of my Tesla coil. This is connected with the orgone right there. This type of monopolar electricity is in such a form that it will grow into organic patterns, a pre-life pattern from the ether itself. Any type of energy like this such as a stream flowing down the side of a mountain, a crack in a piece of window glass, or fresh water percolating up through the sand on a beach all make these organic patterns based on the Golden Ratio. Any time you have energy discharging you find this type of pattern. Of course this ties in directly with what Viktor Schauberger was saying. His work is actual proof of it. You can say there is a shape in space which is the log periodic spiral. It doesn't exist in a tangible form because it is something that grows and decays. Its size fits the wavelength and frequency of the amount of energy to be discharged. Its not like you can map space to see this particular spiral, but if you release energy into space then the spiral will appear.

Golden Ratio Discharge

T: I've heard that Tesla made references in his work to using a TMT for bringing in storms. Do you feel that there is any relationship between what Tesla was doing and what Reich was doing with his cloudbuster?

E: I haven't read too much information which indicates that Tesla was trying

to control the weather. He makes scant references here and there about how weather-like phenomena appear, such as fog appearing in his laboratory, but that wasn't Tesla's particular aim, where Reich's particular aim was in dealing directly with the actual forces. We have to remember that Tesla was a mechanistic, Victorian personality and he was trying to build machines that related to horsepower hours and BTUs and things everybody was concerned with at the time, and turn the globe into a giant amusement park.

T: Such as his plan to light up the atmosphere at night?

E: Right, you would never be able to see the stars, you'd just have the sound of electrical apparatus roaring everywhere. People weren't ready for Nikola Tesla.

T: I get the feeling that you don't approve of Tesla's final vision for the earth.

E: Not the way he represented the ideas, but what's interesting about the technology he made available, when used in perspective, is actually quite healthy for the planet. Then you're dealing with energies that take on organic shapes and you're one step closer to the type of energy that Reich theorized and made some actual physical discoveries of.

T: There's some popular literature on the market today claiming that the strange weather patterns the earth has been experiencing over the last ten years or so are being caused by Soviet use of Tesla apparatus. Have you done any research which would confirm or deny such claims?

E: The claims are basically groundless. I did a four year research project at Sonoma State University (California) involving the relationship between the planets in general, the sun and the weather on this planet, and the effects of solar flares on the weather, the effects of planetary alignments on solar flares, the effects of these things on radio propagation, earthquake activity, and tried to tie the geometries of all these energy patterns together. I found the weather patterns were very tightly coupled to the solar flare cycles, the Russians really don't have anything to do with this. Any effect the Russian Woodpecker signal would seem to have on it would be purely incidental because during these periods of intense solar flares signals like the woodpecker would be sounding louder and propagating better. Maybe its an advantageous point for the Russians to utilize the signal. This seems to be the case. But to think that the woodpecker is making solar flares on the sun and controling the times at which the planets align is absolutely absurd! As far as all these geometric patterns being seen in the sky, the Indians and other ancients knew about these patterns and they look like the patterns generated by mundane forces such as water and dielectricity.

T: What do you feel the woodpecker is and what is its use?

E: Its a non-Hertzian, shortwave signal which could be used for one of two things. Either its used for sounding and exploring the electrical system of the planet or more likely its a cryptographic signal utilizing the spread spectrum technology of frequency hopping and direct sequencing modulation. It is not an ELF signal!

T: Then the cloud patterns are the indicators of cosmic flux?

E: Exactly. A well trained observer can look at the sky and it serves as a metering of the intensity of the cosmic energy which exists at a particular point in space and time. I've utilized this during periods

of heavy solar flares to get an idea of the flare's more subtle characteristics by watching the geometries they produce in space, particularly at the intervals when the solar flares have stopped and all the earth is receiving the discharge from the flares. These discharges produce very profound cloud patterns and of course heavy rain. So the heavy rain cycles were produced by the enormous flares of solar cycle 21, which were cranked out between 1978 and 1982. The flares were most intense around 1978 and as the flares died down we got an upward cycle of precipitation. Now we're at the point where the energy has mostly fizzled out and the weather is fairly indeterminate from the solar-terrestrial physics standpoint.

T: In January we've received reports that the coldest temperatures on record have hit England and on the same day we got a report of an abnormally high 46° temperature in Antartica. Dog sleds have to be run at night because of the heat. My research shows that some of the major contributing factors to the erratic weather patterns have been the mass deforestation of rainforests to produce toilet paper and newsprint, and also nuclear testing which is also directly related to earthquake and volcanic activity.

E: You have to keep in mind that mass deforestation and large amounts of thermodynamic and nuclear energy are going to have a much stronger effect than the subtle energies coming from the planets and the sun. Deforestation and nuclear energy are definitely going to be dominant influences. Being that the size of the earth and the scope of the phenomena are so large, and the frequency of events is slow, its going to take a while to see exactly what effect all these destructive actions are going have. It seems as though everyone intuitively knows that life is going to thoroughly disrupt and things are going to get pretty bad. You just can't keep whacking on the earth and expect things not to start changing.

T: There has been a lot of varying literature on the polar shift appearing over the last 30-40 years. One aspect which I've pursued is the magnetic reversal of the poles. In some of the Native American prophecies they say that the earth will get very hot and then very cold, and then things will balance out again. Does this relate to any electrical phenomena as you understand it?

E: At the point at which the earth's magnetic field equals zero, which happens between maximum positive and maximum negative the planet will cease to be a magnetic energy type of situation and become a dielectric energy type of situation. In most spatial geometry systems which contain electric energy the point of zero magnetic energy is the point of maximum dielectric energy. Interestingly enough, for navigational purposes you wouldn't be able to use iron, or magnetic, permeability type materials anymore. You'd have to start using dielectric permeability materials like ceramic for compasses.

T: Would this be a short lived situation?

E: It would be in balanced proportion to the magnetic and it is probably going on right now, but it is not generally acknowledged due to the lack of measuring instruments. Physicists have focused their attention strictly on magnetism. In a newspaper article I was looking through the other day I saw that the physicists now have an even bigger magnet so they can smash atoms ever harder and find more little tiny fragments to catalog and confuse themselves. What could be quirkier than a quark? (laughter)

T: If this is happening right now and there is a dielectric propagation during the changeover of the magnetic poles could this in some way account for the shifting of orgone streams and be a part of the phenomena of the strange weather we've been having?

E: Yes, it could definitely tie in. You're talking about a whole different spatial geometry emerging as far as how electrical energy is distributed so you're going to have all kinds of effects. The weather is filling in patterns that already exist in space determined by all these fields of force, most of which we don't even know about yet. Tesla was able to open up a door into all these things, but he really didn't explain how to do it. There are other flux fields that can be measured with his apparatus that get more into this dielectric type of situation. Tesla was successful in measuring the amount of charge on the planet, but no one really knows how he did that. That would be an experiment to try. The velocity of light continually changes which changes the capacity of all capacitors and changes the effect of orgone. A fundamental property of an orgone accumulator is that the dielectric material, which Reich called the organic material, serves the purpose of slowing down the velocity of light trying to draw in the orgone energy. Then the metallic layers reflect the electromagnetic part but the dielectric part penetrates through it without even seeing what's going on. The accumulator serves as a magneto-dielectric separator. I don't know if Reich would go along with this. He had his own way of looking at it.

T: In science one has to look at different ways of viewing things if progress is to take place.

E: The important thing about Wilhelm Reich is not so much his apparatus or his theories but his concept of functional thinking. If you know the basic patterns of nature then you have no problem seeing all these phenomena. You have no problem looking up in the sky, knowing what all the cloud patterns mean. You have no problem developing apparatus to work with these energies because you just basically know. The great minds such as Johann Sebastian Bach and Nikola Tesla worked with these types of situations. You could say that all their work is based on archetypal forms. That's what makes their inventions or music so powerful. They were discoverers and not just inventors or composers or whatever kinds of names are put on these types of people. They go beyond that, they have tapped in and can see these fundamental shapes and geometries that everyone else is numb to. Viktor Schauberger is most important for bringing these things down to a practical level. If you make the right shapes then organic energy or water flow becomes easily manageable, that is, engineerable. He only intuitively knew a lot of this so it still wasn't worked in engineering science. If you bring in Tesla, Reich and, interestingly enough, Johann Sebastian Bach (who plays an important part in this) then you begin to find the nature of this basic form. If we take Tesla's three phase electricity, or rotating magnetic field, we find that it is based on the archetypal form known as the solar cross or by various other names.

T: Mandalas, medicine wheels?

E: Right, these are four quadrant types of forms, a balanced cross as opposed to an unbalanced cross.

T: This is where you get the Four Quadrant Theory of Electricity?

E: Right, electricity has to be viewed from a four quadrant type of situation. The right angle plays an extremely fundamental role in electricity. It is generally a right angle phenomenon.

T: This goes back to what we were discussing earlier about the positions of the planets in relation to solar flares and the weather. How do the quadrature relationships tie in with that?

E: When you take the planets like Mercury and Jupiter, which are the real activity generators, in right angle relationships involving the earth and the sun then you find that radio reception and electrical conditions on the earth tend to be disrupted. RCA used this for a number of years, its called radio astrology. Astronomers refuse to even talk about it, but you have a big company like Radio Corporation of America basing all their circuit predictions on it. They were big time, too. They had the big time circuits. They had the patents on radio and they're using astrology. Many old time RCA employees would talk about how the planets affect people's behavior, its just common knowledge to them because they have meters right there where they see these cosmic disturbances, and of course when they go out on the street or drive home they find that people are also modified by these various waves that were affecting shortwave transmission.

T: Since we're talking about behavioral modification, there is a lot of talk currently claiming that the Soviets are modifying behavior using extremely low frequencies (ELF). This is being attributed to Tesla apparatus. What exactly did Tesla do with ELF?

E: Tesla never did any work in ELF. His work was with the high frequencies, the opposing end of the spectrum. Tesla was the first to break away from the low frequency phenomena and that is what makes his work so important.

T: What about literature claiming that the Russians are using Tesla's ELF transmitters?

E: As far as I can tell, its basically a paranoid fantasy.

T: No direct relationship to any scientific work you've done or any mention by Tesla?

E: No, I've never seen evidence of such things, but I don't want to discredit people's work in that area.

T: Right, I feel that Dr. Robert Beck has done some tremendous and groundbreaking research into how ELF fields affect people's behavior. My question was to find out if any of this research is related to Tesla's work in any way.

E: There's no connection at all to Nikola Tesla. Its my personal opinion that the communists are not attempting anything of the sort.

T: So Tesla's name is being used as a technique to enhance various people's theories?

E: Basically. What's interesting is that these behavioral modification techniques are found on television commercials here in this country. American TV commercials that involve a lot of money use certain images, frequencies, wavelengths and such. This is along the lines of what has been proposed that the Russians are doing, but it all comes through the TV screen. It is not being transmitted through the ground or the ether or the earth-ionosphere wave guide.

T: So you're saying that high tech TV commercials are a form of psychotronic programming?

E: Yes, they're totally psychotronic. People in a sensitized state will react to that stuff pretty heavily, wheras the average person sees it as just something else on the TV.

T: Do you see these psychotronic images, not just on TV, but actually in the products being sold to consummers?

E: Its everywhere. Architecture represents the thought patterns of each era, so now we have an architecture which is sort of the logical conclusion of modernism, or what I refer to at this point as techno-fascism. The covers of Omni Magazine serve as a perfect example of techno-fascistic art. There is sterility and everything is in rectangular x, y, z, coordinates. The images are usually faceless and abstract. Of course architecture and art have a direct influence on people. It gets right down to the inside without having to go through any thinking process or educational process. If we take for example any piece of great music which has been around for a while, for a few hundred years, and people still want to listen to it for some reason. It doesn't matter if they're English or French or Russian, everybody likes it. The same thing with mathematics - it doesn't matter if you're German or Yugoslavian, any equation is still the same, the numbers and letters are still the same. There's no instructions needed, you just go right to work. So the art and architecture now is kind of an engineered thing designed to maximize the efficiency of consumption in the things that are desired in this particular type of techno-fascistic society.

T: How does this relate to automobile styling?

E: Well of course that's architecture again. There's generally three or four architectural patterns produced by all automobile manufacturers and interestingly enough, once you start looking for these things, you notice each automobile manufacturer actually uses the same letters and numbers for the same form of car that all the other companies do. It seems almost as if there is some sort of program, but it seems that now, rather than being a characteristic style of the era, there is a plan behind all of it. Of course its easy to cook up all these conspiracy theories about this, it could be accidental. It is interesting to study to see what representations exist in the modern era.

T: Its not accidental that the psychotronic programming has filtered into television programming, is it?

E: No. There's strong evidence indicating that its not accidental. The best case of that which I've seen is that of a picket fence I saw in the surf on a TV commercial to give a flash of vertical lines, which is a fundamental geometry used in all high tech TV commercials. Its either an x, y, coordinate grid, or horizontal lines, which are very popular, but very often vertical lines. Its hard to distinguish exactly what determines which one is used. Now I saw a commercial where people were playing on the beach and out in the surf was a small picket fence. Now how many times does a person see a small section of picket fence in the surf? It won't stay there too long anyway. So apparently it was necessary to use it to place the vertical lines. Whether this is an architectural style or whether it has an archetypal meaning still has to be determined.

T: That would be a whole area of research in itself, the deciphering of TV commercials to see what is being put into people's heads.

E: Its the same thing with the food. You go to the store and grab two loaves of bread. You look at one loaf and its ingredients read like a chemical rubber company's handbook on organic chemistry. It tastes like garbage and it doesn't do anything good for you. Its just worthless stuff. If you get a loaf of bread that has none of that stuff in it then it tastes good and makes you feel good. These chemicals don't really prolong the life of the bread, they don't make the food taste any better, yet they're in there. Why are they in there? They don't do anything...why are they in there?

T: It can't be an accident.

E: No, they certainly didn't slip in. They're all precisely measured and metered.

T: There's also a lot of stuff that's not required to be on the label. Take for example the new soft cookies in the stores. They contain plastic, but since plastic is not a food it doesn't appear on the list of ingredients.

E: That reminds me that in the 1930s PCBs were going to be used to extend the life of chewing gum. Shortly afterwords came the phrase - "Better Living Through Chemistry." From an ecological standpoint the chemical destruction of the planet has to be feared more than the nuclear or anything else. We have all these PCBs and everything just floating on the surface of the oceans. What's going to happen when it all soaks in?

T: Well we have the phenomenon of whales beaching themselves, and of course the scientists can't figure it out because they see everything as being disconnected.

E: That one's not too hard to figure out. Take a large naval aircraft carrier. This thing is going to have some heavy duty sonar on it with a peak output power of about 750,000 watts. This is 750,000 watts of sound, which is precisely in the wavelength that the whales communicate on. They can hear their own sounds halfway across the ocean and now the ocean is filled with these incredible shrieking noises that sound like spark gaps, ringing sounds and rapid explosions. It probably sounds like being in a battle zone. Its no wonder why they would want to hop out of the water. Their environment has been turned into a raucous.

T: I've heard that the sound that whales make is a direct transmission of a three dimensional picture. Before the advent of propeller driven boats and sonar and whatever the whales could communicate around the world in 3-D.

E: Sure, we've screwed ourselves. Nikola Tesla worked in a clean electrical environment to make his various measurements. Now the space is just alive with 60 cycles and its harmonics. You can walk out into the deep desert, and after meditating and calming down for a while, you can feel the air itself hum like a giant induction motor. This pulsating 60 cycles is just roaring in the air. You have to keep in mind that the entire electrical system of the country is operating in phase conjunction. Everything has to move together. Every motor, every transformer, every piece of machinery that produces electromagnetic vibrations is all locked in phase. Everything is moving in unison and whacking on the planet simultaneously and the planet actually hums at 60 cycles.

T: What do you feel are the prospects for a beneficial technology and who do you think are the sources for actually producing it?

E: It seems to me that the best place to start is with Viktor Schauberger and Wilhelm Reich. There's not really too many people doing anything real these days. There's a lot of people making claims.

T: The only other person I'm in touch with besides yourself who is actually producing something that works is Trevor James Constable. He's really figured something out about how these subtle etheric flows operate on the planet and he can demonstrate it over and over again.

E: Yeah, there aren't too many around like Trevor. The same thing is with the "free energy" thing. Now that I've completely gone through all the various works I've really run across only one person who is really doing anything, and I know he doesn't want his name mentioned in public. This person is not known by anybody. All the people out there making all these claims and hoop-de-doo are frauds. Every single one of them is a fraud! And that leaves out none.

T: So basically the free energy thing is like the ELF stuff, its just a technique for getting people promoted in the public eye?

E: Right, also everyone is trying to accomplish it with bigger and bigger magnets, the favorite toys of the physicists. Free energy will never come out of magnetism unless the magnetism is tricked with hysteresis, and of course very little is understood about that. Free energy will come from the dielectric field where energy grows rather than decays, perhaps orgone energy will be the way.

T: I've been checking into the concepts of the four ethers as presented by Rudolph Steiner and the Anthroposophical schools, and Trevor Constable has shown that the Chemical or Tone ether is related to the water system of the planet and is functionally equivalent to orgone. I've found through looking into your work that this ether is also related to the dielectric field. Electromagnetism doesn't fit in and was considered a corrupted ether along with the nuclear force. These weren't natural forces.

E: In alternating current engineering the magnetic wave is the one that is consumptive and retarded, whereas the dielectric wave is productive and advanced. You could say that electromagnetism is the fundamental geometry of consumptive retardation.

T: That makes a good anology of our present society.

E: Exactly, because everything always fits together. All of our machines and apparatus and theories are extensions of our own thought patterns. Its all basically an architectural type of situation.

T: It seems as though the true promise for beneficial technology lies in the etheric, organic side, the side of life. It seems as though when one presents this information on living energy to scientists, rather than looking at it objectively, they react in a rage. Reich called this the emotional plague and his work has suffered from it. What do you think is with these scientists who refuse to face scientific verification of energies such as orgone.

E: The problem is that they are not scientists, they're not following the precepts of science. They're mystics worshipping a nuclear type of destructive energy. My contention about nuclear power plants is

that they're not there to generate energy, they serve as temples
to worship this energy of decay and destruction and disease. The
high laws are the laws of thermodynamics where everything must
diffuse, decay and dissipate. Its quite obvious that they're
pretty much worthless for generating electricity because, for one
reason, they cost too much. They have to pump billions and billions
of dollars into them and they hardly produce enough electricity
to justify their existence, let alone break even. So they serve
no practical purpose even though they were purported in the late
1950s to be so-called free energy devices. You look at the way
things were in the 50s and you find its basically a death worship.
That's one thing that surprises me now is that people want to get
back to the 50s and relive those images.

T: So you're saying that the American Dream has turned out to be
a nightmare?

E: The American Dream is to destroy the earth. We've succeeded in
training everbody else how to do it too, so in case we fail they
can take over where we left off.

T: I know what you mean. New Zealand's native forests are being
stripped to make disposable chopsticks for the Japanese. Eric, in
closing do you have any final message?

E: Tell everyone to quit their jobs and smash their televisions.

TRANSMISSION OF ELECTRICITY
Eric P. Dollard
(C) 1987

Part I - Electro-Magnetic Energy

A)   When electro-magnetic energy is conveyed from one point
in space to another point in space a closed loop is required
to connect the   point   of   generation with   the   point   of
utilization.   This closed loop is called the electric circuit
and consists of   a   boundary formed by what have become known
as electric conductors. This boundary   encloses   a definite
quantity of space.

     When electro-magnetic   energy flows through   the   space
enclosed by the   electric circuit phenomena take place inside
the circuit material   as   well   as   the   space   outside   this
material.

     Within the   circuit   conductor   material,   during   the
passage of electro-magnetic   energy,   this   energy   is
continuously being consumed within   the   molecular   space and
converted into thermo-dynamic   energy (heat).   This   may   be
represented by the   passing   electro-magnetic   wave   dragging
into the electric circuit material.   This   drag is analogous
to frictional losses   and   is   called the resistance   of   the
electric circuit, R.

     In the   space   outside   the   circuit conductor material,
during the passage of electro-magnetic energy, a condition of
aetheric stress exists, which is called the electric field of
the electric circuit. The energy   contained by the electric
field is continuously   being transferred through   this   space
from the point   of   generation   which   supplies energy to the
electric field to the point of   utilization   which   abstracts
energy from the electric filed.

     The electric   field   of   the   circuit   exerts   physical
magnetic and dielectric   actions.   The   magnetic   action   is
orientated parallel to the surface of the conductor material
(in its immediate   vicinity).   That   is,   a   needle   shaped
magnetic body tends to set itself in a direction parallel to
the surface of the conductor material.

     The dielectric action is orientated perpendicular to the
surface of the   conductor   material   (in   its   immediate
vicinity).   That is, a needle shaped dielectric body tends to
set itself in a direction perpendicular to the surface of the
conductor material

     Thus, the   electric   field of the circuit,   over   which
passes the flow   of   electro-magnetic   energy, has   three
fundamental axes which are at right angles with each other:

The <u>dielectric</u> axis, perpendicular to the conductor surface,

The <u>magnetic</u> axis, parallel to the conductor surface,

The <u>electro-magnetic</u> axis, co-axial with the direction of the electric circuit.

The space outside of the conductor material, bounded by the electric circuit, has the property of propagating a wavefront of light at a definite velocity, C. This velocity is a characteristic property of the aether in which the electric circuit exists. The inverse square of this velocity is called the capacitance of the electric circuit.

$$C = \frac{1}{c^2} \qquad (4\pi 10^{-9} p)^{-1} \text{ farads}$$

The capacitance is a measure of the ability to store energy in the dielectric field of induction, of the electric circuit.

The quantity of space enclosed by the bounding electric circuit is proportional to the total length of the electric circuit, l_1 , multiplied by the distance between the bounding conductors, l_2 ,

$$l_1 l_2 = l_0^2 \qquad (\text{centimetre})^2$$

and has the dimensions of an area. This area in square centimetres defines what is called the inductance of the electric circuit.

$$l_0^2 = L \qquad 4\pi 10^{-9} p \text{ Henrys}$$

The inductance is a measure of the ability to store. energy in the magnetic field of induction of the electric circuit.

Together, the capacitance and the inductance representing the dielectric and magnetic fields of induction of the electric circuit, serve as a measure of the propagation characteristics of the electric circuit for the transmission of electro-magnetic energy.

$$- LC = t_0^2 \qquad \text{, natural period}$$

$$- \frac{L}{C} = Z_0^2 \qquad \text{, natural impedance}$$

B) The popular conception of electro-magnetic energy transmission as it exists today is; energy is transmitted through the interior of the conductor material, that is, electricity flows through wires like water flows through pipes. This transmission is said to involve the flow of charged sub-atomic particles called electrons.

According to this theory the materials possessing the most "free electrons" serve as the best conductors of electro-magnetic energy. Conversely, the materials possessing the least "free electrons" serve as the poorest conductors of electro-magnetic energy. These materials are called insulators. Insulators are said to block the passage of electricity.

The conclusion drawn is that electricity is the flow of electrons and that the space outside of the conductor material is empty and dead. It follows that a superconductor is that material which offers no opposition to the flow of electrons and hence no opposition to the flow of electricity. Conversely, free space devoid of matter offers total opposition to the flow of electricity. Nothing could be further from the truth, yet this is the concept of electricity propounded by the scientist of today.

The real actions of the conducting material presents itself when it is in the so-called superconducting state. If a section of a superconducting material is suspended in space, free to move, and a magnetic field of induction is made to approach this material, it is found that the material is repelled by the approach of the field. If the material is indeed superconducting it will maintain a definite distance, l, for an indefinite period of time $t \longrightarrow \infty$, from the source of magnetic induction. Any tendency for the material to sink into the magnetic field, $l \longrightarrow 0$, indicates the material is not perfectly superconducting but has a finite resistance R.

It may be concluded that the so-called conducting material does not so much conduct as it does repel or reflect magnetism, or electro-magnetic energy in general.

If an electric circuit is conveying electro-magnetic energy as previously discussed it is found that a force or pressure is exerted upon the circuit material. This pressure tends to repel opposing parts of the circuit material and cause the circuit to expand. The quantity of this pressure in the space bounded by the circuit is called the magneto-motive force of the circuit.

It can therefore be seen that the conducting materials serve as the walls of a container holding magnetic pressure. If the conducting material is in the so-called superconducting state and the ends of the circuit are shorted the electric circuit will hold this magneto-motive pressure indefinitely, in analogy with compressed air stored in a tank. In order for this to be the result of electron flow requires that this flow be in perpetual motion, an unlikely proposition.

It may be concluded that materials called electric conductors might best be called electric obstructors and serve not to conduct electro-magnetism but serve to reflect it back on itself. The flow of electro-magnetism is conducted by the aethereous space bound by the obstructing material.

The character of this aethereous space is represented by its inductance L and its capacitance C. Since pure space is considered a perfect insulator by atomic theory is it not ironic that it offers the least resistance to the flow of electro-magnetism? It is then the insulators that are the true conductors of electricity.

THE TRANSMISSION OF ELECTRICITY, Part II

By Eric P. Dollard
© 1988

Part I of "The Transmission Of Electricity" (Sept-Oct 1987 JBR) dealt with the nature of electric transmission along space bounded by a set of guiding wires. These wires were found not to be the conductors of electricity, but space itself is the electric conductor. In reality the so-called conductor material of which the wires are made are reflectors of electricity, analogous to the reflective metal coating on the back of glass (dielectric) mirrors.

Because the dimensions of the co-efficient of dielectric induction, or farads, is given by the inverse of the square of the velocity of light,

$$1/c^2 = t^2/l^2 \quad \text{sec}^2 \text{ per cm}^2 \quad (4\pi 10^{-9})^{-1} \text{ farads}$$

the notion has occurred that these dimensions establish the propagation velocity of electric transmission, and thereby electricity and light are the same thing. This concept may have become the most significant obstacle to the understanding of electric transmission.

In this part of the study of the transmission of electricity the conduction of electricity of space will be further examined through observation of the characteristics of radio transmission and reception in the medium frequency range, 300-3000 kilocycles per second.

When the distance between the guiding wires of an electric system is significantly increased the electric field that is associated with these wires occupies a large volume of space which extends far beyond the vicinity of the guiding wires. The expanded electric field of induction associated with the spaced apart guiding wires now can combine with the electric fields of induction associated with more distant sets of guiding wires. This sharing of electric fields by two or more remote systems of wires is known as the mutual inductance of the systems. Through the process of mutual inductance electricity may be transmitted through space without the employment of a set of guiding wires to connect the transmitter to the distant receiver. Hence, the "wireless" system of electric transmission through space.

One example of such a system is the A.M. broadcasting service in commercial use today (535-1650 Kc/sec). In this form of transmission the guiding wires spread out into a very tall tower (75-300 ft) far into space on one side and a large copper screen buried in the ground on the other side of the system.

The spacing that exists between the uppermost part of the tower and the outermost part of the screen is very large, therefore the electric field of this system extends to great distances as a result of this spacing. As with any system involving an electric field of

induction energy is taken up by the field during one portion of the A.C. cycle and returned during the next portion of the A.C. cycle. If measurements are taken on the flow of energy at the terminals of the tower-screen arrangement it is observed that only a small fraction of the energy taken by the electric field is returned during the discharge portion of the A.C. cycle.

This loss of energy is unlike that which occurs in the oscillating energy exchange that takes place with closely spaced guiding wires. For close spacing the loss of energy is very small and that energy which is lost is fully accountable by the equivalent quantity of heat gain in and around the wires. However, for wide spacing the loss of energy is very large but the gain of heat energy is disproportionately small.

This direct observation of the disappearance of electric energy without its reappearance in an equivalent quantity of a differing form such as heat or mechanical activity raises a most important question, that is, where does all this energy go?

Many believe that this lost energy is radiated away from the tower in the same manner as light & heat radiation from a light bulb. While this theory seems plausible, there exists evidence that it may not be the correct interpretation of how the energy is lost. Nikola Tesla, the discoverer of radio, claimed repeatedly that the electromagnetic radiation theory (then known as the Hertzian wave theory) was inimical to the proper understanding of the wireless process as he conceived it.

The electromagnetic theory, or what was known as the Hertzian wave theory in Tesla's era, fails to explain certain observations made in practical radio engineering. According to E.M. theory the propagating velocity of electric induction must be the velocity of light. In the practical world of engineering however, the factor $\pi/2$, or 1.57 times the velocity of light will appear in wave calculations. Is it not coincidental that Tesla claimed that the effective propagation velocity of his wireless system was $\pi/2$ faster than the so-called speed of light?

Also, according to E.M. theory, the propagation of electric induction must be the cross combination of the dielectric induction and the magnetic induction, these two inductions never propagating independently. The work of J.J. Thomson & M. Faraday indicate that these two distinct forms of induction do propagate independently. Wheatstone claimed that the dielectric induction propagated at $\pi/2$ times faster than light.

In the practical world of radio engineering in the A.M. broadcast band it is not feasible to employ electromagnetic antennae at the point of reception. This is because an electromagnetic antenna must support a large fraction of the electromagnetic wavelength, this wavelength being several hundreds of feet. That is, such an antenna must be a tall tower. Since the employment of a tower for every radio receiver is an absurdity other forms of antennae are used. One such antenna is the magnetic permeability antenna found in transistor radios. This

antenna responds only to the magnetic field of induction and works on the principle that a ferrite core multiplies the effective value of space a thousand fold and thereby simulates a large structure. This type of antenna is found to be very directional and must be oriented perpendicular to the direction of the transmitting station. Another form of antenna is the electro-static capacity antenna found on automobile radios. This antenna responds only to the dielectric field of induction and works on the principle that a resonant transformer connected to an elevated capacitance counteracts the effects of distance and thereby appears close to the transmitter. This type of antenna is found to be completely non-directional and can be oriented in any fashion.

Neither of the aforementioned antennae operate on the principle of electro-magnetic induction as propounded by Hertzian wave theory, but on distinctly magnetic inductive propagation or dielectric inductive propagation. This is contrary to the notion that the magnetic & dielectric fields of induction are inseparable, that is, they must propagate co-jointly. This distinct separate propagation of these two fields of induction is how electric propagation was conceived by nearly all of the important electrical pioneers.

The question has remained unanswered as to where does all the energy go that the broadcast transmitter must supply to the tower if it is not radiated in a fashion similar to light or heat energy. The answer may be found in the statement of C.P. Steinmetz that it is consumed by the hysteresis of the aether in which the tower is immersed. To quote, "Mr. Kennelly says that air has apparently no hysteresis, and this is the general assumption, too. But nevertheless, in the light of modern science we must say that even air has a certain hysteresis, a time-hysteresis. For we know now, that the magnetic stress in air does not appear instantaneously with its source; but we know that magnetic disturbances are propagated though air with a finite velocity, the velocity of light. Now, if you examine the phenomenon more particularly, you will see, that then, and only then, no energy would be dissipated in space, if the magnetic disturbance set up at any place, were propagated through the whole space instantaneously. But as soon as the propagation of energy through space consumes a finite time, no matter how small this time be, a certain loss of energy must necessarily be connected therewith, and, calling the retardation of the magnetic disturbance behind the magneto-motive force, hysteresis, we must say: even air has hysteresis." (1)

The notion of aethereous hysteresis will be explored in part III of "The Transmission Of Electricity".

1. Transactions of the AIEE, Kennelly On Magnetic Reluctance, Oct. 27, 1891.

UNDERSTANDING THE ROTATING MAGNETIC FIELD

by ERIC P. DOLLARD
© 1986

TESLA, PHYSICS AND ELECTRICITY

Research into the works of Nikola Tesla reveals electric phenomena that behave contrary to the theory of electricity in present use. Explanation of Tesla's inventions has been given from the standpoint of physics, yeilding many misconceptions. The science of physics is based on the phenomena surrounding particles and mass, which finds little application in the study of electric phenomena.

The explanation of Tesla's discoveries are to be found in the science of electricity rather than the science of physics. The science of electricity has been dormant since the days (1900) of Steinmetz, Tesla and Heaviside. This is primarily due to vested interests which we may call the "Edison Effect."

Charles Proteus Steinmetz

To assist in the understanding of Nikola Tesla's discoveries, thereby putting his inventions to work, a theory of electric phenomena applicable to these discoveries must be developed.

A starting point of such a theory has been developed by C.P. Steinmetz. Steinmetz was employed by the Edison/Morgan Company, General Electric, to decipher the Tesla patents, thereby evading these patents. With unlimited funds for research and a keen insight into electric phenomena, Steinmetz is a most significant contributor to the knowledge of electricity. His work is presented in three volumes:

I) "Theory and Calculation of Alternating Current Phenomena", third edition, 1900, McGraw Hill, New York.

II) "Theory and Calculation of Transient Electric Phenomena and Oscillations", third edition, 1920, McGraw Hill, N.Y.

III) "Electric Waves, Discharges and Impulses", second edition, 1914, McGraw Hill, N.Y.

These serve as an introduction to the theoretical understanding required.
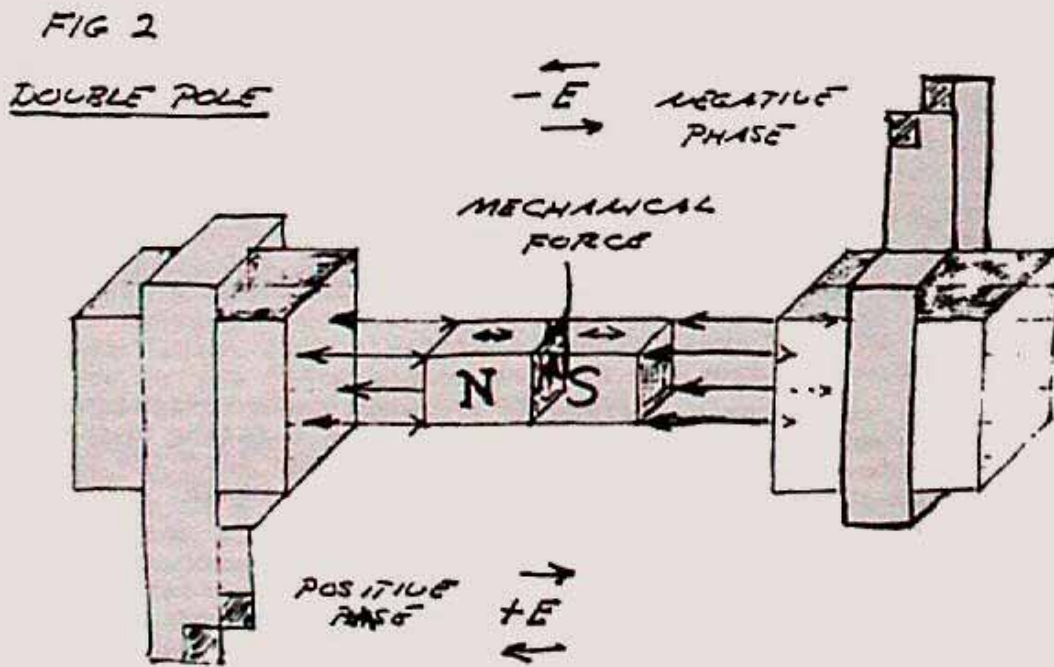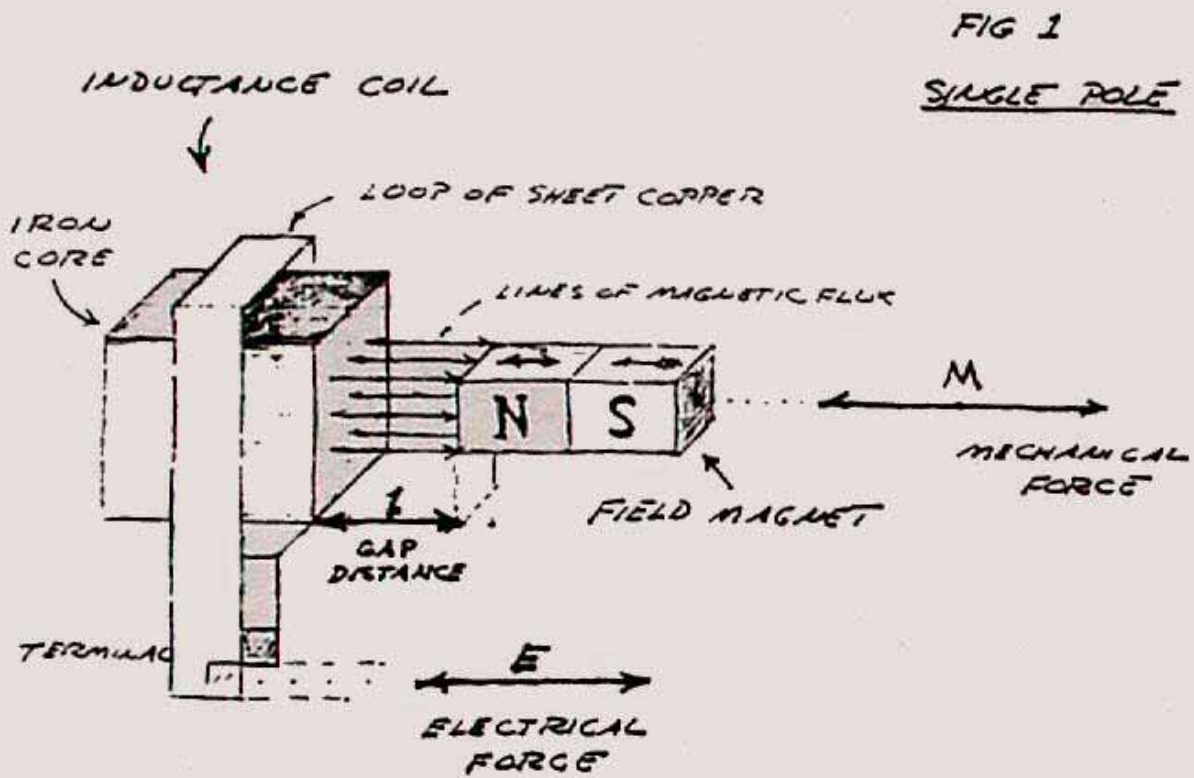
INTENT OF PAPER

This paper serves as a preface to a theoretical investigation of N. Tesla's discoveries by the examination of the rotating magnetic field and high frequency transformer. It is assumed that the reader is acquainted with the commonly available material on Tesla, and possesses a basic knowledge of mechanics and electricity.

THE ROTATING MAGNETIC FIELD

THE GENERALIZED ELECTROMECHANICAL TRANSFORMER

In the general electromechanical transformer energy is exchanged between mechanical and electric form. Such an apparatus typically employs a system of moving inductance coils and field magnets. It is

FIG 1

SINGLE POLE

INDUCTANCE COIL

LOOP OF SHEET COPPER

IRON
CORE

LINES OF MAGNETIC FLUX

N S

M

MECHANICAL
FORCE

FIELD MAGNET

1

GAP
DISTANCE

TERMINALS

E

ELECTRICAL
FORCE

FIG 2

DOUBLE POLE

−E   NEGATIVE
PHASE

MECHANICAL
FORCE

N S

POSITIVE
PHASE

+E

desirable that the mechanical energy produced or consumed by of rotational form in order to operate with pumps, engines, turbines, etc. The method of producing rotary force, without the use of mechanical rectifiers known as commutators, was discovered by Nikola Tesla in the late 1800s and is known as the rotating magnetic field.

ELEMENTAL PRINCIPLES

An examination of the rudimentary interaction between inductance coils and field magnets will provide some insight into the principles behind the rotary magnetic field.

Consider a simple electromechanical device consisting of a piece of iron with a copper loop winding around it along with a small bar magnet (Fig. 1). Any variation in the distance (1) between the pole faces of the inductance coil and magnet produces an electromotive force (voltage) at the terminals of the copper loop resulting from the field magnet's lines of force passing through the iron core of the inductance coil. The magnitude of this E.M.F. is directly proportional to the speed at which the distance (1) is varied and the quantity of magnetism issuing from the field magnet pole face.

Conversely, if an electromotive force is applied to the inductance coil terminals, the distance (1) varies at a speed directly proportional to the strength of the E.M.F. and the quantity of magnetism issuing from the field magnet pole face. Thus electrical force and mechanical force are combined in this device.

If a flow of electrical energy (watts) is taken from the coil terminals and delivered to a load mechanical resistancy (friction) appears at the field magnet as a result of magnetic attraction and repulsion between the magnet and iron core. Mechanical force applied to the field magnet in order to move it results in power flow out of the coil. This flow of power generates an oppositional or counter electromotive force which repels the field magnet against the mechanical force. This results in work having to be expended in order to move the magnet. However this work is not lost but is delivered to the electric load.

Conversely, if the field magnet is to deliver mechanical energy to a load, with an externally E.M.F. applied to the coil terminals, the field magnet tends to be held stationary by the resistancy of the connected mechanical load. Since the field magnet is not in motion it cannot develop a counter E.M.F. in the coil to meet the externally applied E.M.F. Thus electrical energy flows into the coil and is delivered to the field magnet as work via magnetic actions, causing it to move and perform work on the load.

Hence, mechanical energy and electrical energy are rendered on and the same by this electromechanical apparatus. Connecting this apparatus to a source of reciprocating mechanical energy produces an alternating electromotive force at the coil terminals, thus a linear or longitudinal A.C. generator. Connecting this apparatus to a source of alternating electric energy produces a reciprocating mechanical force at the field magnet, thus a linear A.C. motor. In either mode of operation the field magnet reciprocates in a manner not unlike the piston of the internal combustion engine. Rotary motion is not possible without the use of a crankshaft and flywheel.
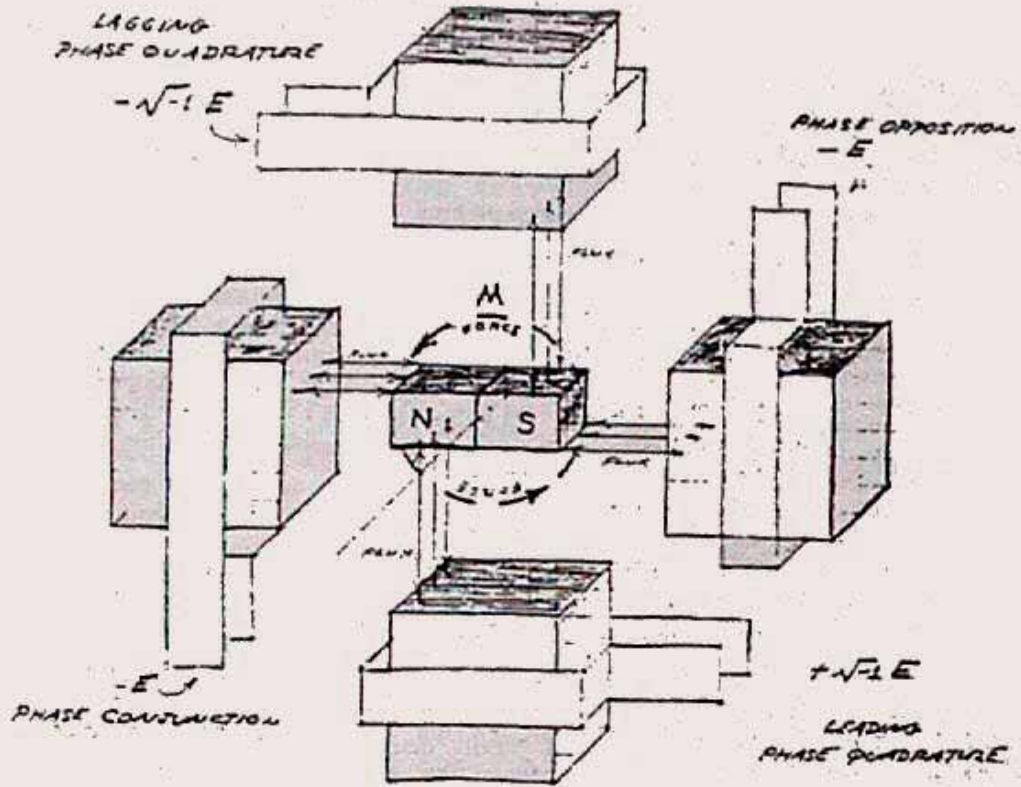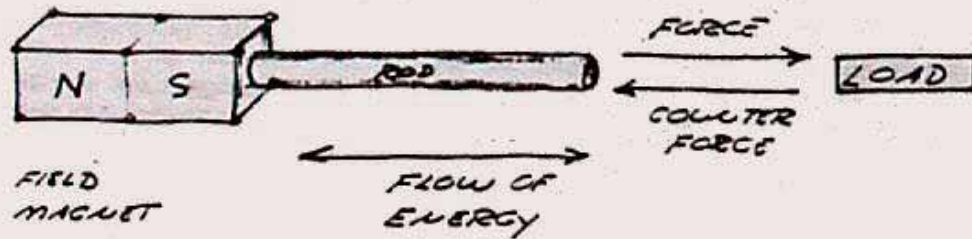
FIG 3

LAGGING
PHASE QUADRATURE
$-\sqrt{-1}\,E$

PHASE OPPOSITION
$-E$

M
FORCE

N | S

$-E$
PHASE CONJUNCTION

$+\sqrt{-1}\,E$
LEADING
PHASE QUADRATURE

FIG 4

N | S

ROD

FORCE

LOAD

COUNTER
FORCE

FIELD
MAGNET

FLOW OF
ENERGY

Arranging two inductance coils in a line as shown in Fig. 2 and connecting these coils to a pair of alternating E.M.F.s that are out of step by 1/2 of an alternating cycle with respect to each other results in the mechanical force being directed inwardly into the molecular spaces (inner space) within the field magnet. The field magnet is alternately stretched and compressed by magnetic action and no external force is evident except as vibration and heat. However, arranging two of the pairs shown in Fig. 2 at right angles to each other, connecting each to a pair of alternating E.M.F.s that are out of phase or step by one quarter cycle (quadrature) with respect to each other produces a rotating travelling wave of magnetism, that is, a whirling virtual magnetic pole. This virtual pole travels from one pole face to the next during the time interval of one quarter cycle, thus making one complete revolution around all the pole faces for each cycle of alternation of the E.M.F.s. The field magnet aligns with the virtual pole, locking in with the rotary magnetic wave, thereby producing rotational force.

An analogy may assist in understanding this phenomena. Consider that the sun appears to revolve around the earth. Imagine the sun as a large magnetic pole and your mind's view of it as the field magnet. As the sun sets off in the distant horizon, it seemingly dissappears. However, the sun is not gone but it is high noon 90 degrees, or one quarter, the way around the planet. Now imagine moving with the sun around the planet, always keeping up with it so as to maintain the constant appearance of high noon. Thusly, one would be carried round and round the planet, just as the field magnet is carried round and round by the virtual pole. In this condition the sun would appear stationary in the sky, with the earth flying backwards underfoot. Inspired to thinking of this relation by the poet Goethe, Tesla per- cieved the entire theory and application of alternating electric ener- gy, principally the rotating magnetic wave.

"The glow retreats, done is the day of toil;
   it yonder hastes, new fields of life exploring;
   Ah, that no wing can lift me from the soil,
   upon its track to follow, follow soaring..."

ROTATIONAL WAVES

The fundamental principle behind the production of the rotary magnetic field serves as the principle behind all periodic electric waves. It is therefore of interest to investigate the discovery a little further.

The apparatus shown in Fig. 1 develops mechanical force along the axis of the field magnet as shown in Fig. 4. Likewise, mechanical counterforce is applied along the axis of the field magnet. Hence, if work is to be drawn or supplied respectively to the field magnet from an axternal apparatus, a connecting rod is required between the two machines. The flow of energy is along the axis of the rod and thus is in line (space conjunction) with the forces involved. A simple analogy is a hammer and nail. The hammer supplies mechanical force to the nail, the nail transmitting the force into the wood. The counter- force tends to make the hammer bounce off the nail. However, the wood is soft and cannot reflect a strong counterforce back up the nail and

into the hammer. Thus the nail slides into the wood absorbing mechanical energy from the hammer which is dissipated into the wood.

The apparatus of Fig. 2 develops mechanical force axially also, but it is entirely concentrated within the molecular space. Any counterforce must push back slong the same axis. Thus the work is also along axis like Fig. 4 and is delivered to the molecular structure. The analogy is two hammers striking a steel block from opposite sides, pounding the block and producing heat and vibration within it.

The apparatus of Fig. 3 produces a quite different wave form (Fig. 5). The mechanical force delivered to the shaft is applied at a right angle to the axis in clockwise direction. The counterforce is applied in the opposite rotational sense or counter-clockwise direction at a right angle to the axis. The flow of mechanical energy is still along the shaft as in Fig. 4, however, it no longer pulsates in magnitude with the cycle but it continues, quite like the flow of electric energy in a direct current circuit.

An analogy is a screw and screwdriver. The screwdriver is forced rotationally clockwise by the hand or other motive force. The counterforce appears in opposition, that is counterclockwise, thereby arresting the rotation of the screwdriver. However, the wood is soft and cannot reflect the counterforce back into the screwdriver. Thus the screw travels longitudinally into the wood, perpendicular to the rotation of the screwdriver.

The form of this wave has been of great interest to a wide variety of fields of endeavor. It has been called the Caduceus coil, spinning wave, double helix, solar cross, and of course the rotating magnetic field. Applications are as wide ranging, from sewage treatment plants and guided missles all the way to the Van Tassel Integratron and astrology.

FIG 5
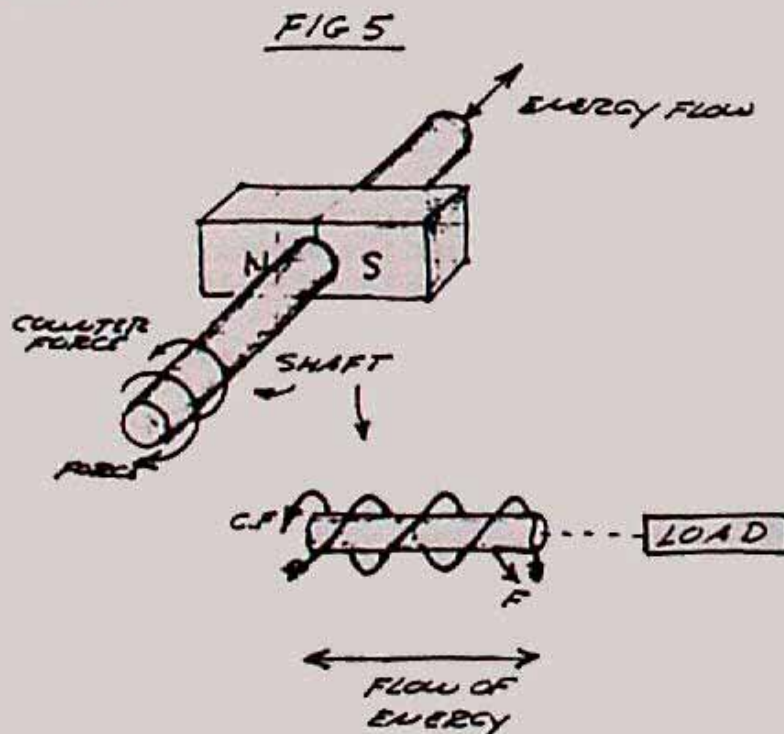
Introduction to

DIELECTRICITY AND CAPACITANCE

by Eric P. Dollard

CAPACITANCE

The phenomena of capacitance is a type of electrical energy storage in the form of a field in an enclosed space. This space is typically bounded by two parallel metallic plates or two metallic foils on an intervening insulator or dielectric. A nearly infinite variety of more complex structures can exhibit capacity, as long as a difference in electric potential exists between various areas of the structure. The oscillating coil represents one possibility as to a capacitor of more complex form, and will be presented here.

CAPACITANCE INADEQUATELY EXPLAINED

The perception of capacitance as used today is wholly inadequate for the proper understanding of this effect. Steinmetz mentions this in his introductory book *ELECTRIC DISCHARGES, WAVES AND IMPULSES*. To quote, "Unfortunately, to a large extent in dealing with dielectric fields the prehistoric conception of the electrostatic charge (electron) on the conductor still exists, and by its use destroys the analogy between the two components of the electric field, the magnetic and the dielectric, and makes the consideration of dielectric fields unnecessarily complicated."

LINES OF FORCE AS REPRESENTATION OF DIELECTRICITY

Steinmetz continues, "There is obviously no more sense in thinking of the capacity current as current which charges the conductor with a quantity of electricity, than there is of speaking of the inductance voltage as charging

the conductor with a quantity of magnetism. But the latter conception, together with the notion of a quantity of magnetism, etc., has vanished since Faraday's representation of the magnetic field by lines of force."

THE LAWS OF LINES OF FORCE

All the lines of magnetic force are closed upon themselves, all dielectric lines of force terminate on conductors, but may form closed loops in electromagnetic radiation.

These represent the basic laws of lines of force. It can be seen from these laws that any line of force cannot just end in space.

FARADAY & LINES OF FORCE THEORY

Faraday felt strongly that action at a distance is not possible thru empty space, or in other words, "matter cannot act where it is not." He considered space pervaded with lines of force. Almost everyone is familiar with the patterns formed by iron filings around a magnet. These filings act as numerous tiny compasses and orientate themselves along the lines of force existing around the poles of the magnet. Experiment has indicated that a magnetic field does possess a fibrous construct. By passing a coil of wire thru a strong magnetic field and listening to the coil output in headphones, the experimenter will notice a scraping noise. J. J. Thompson performed further experiments involving the ionization of gases that indicate the field is not continuous but fibrous (*ELECTRICITY AND MATTER*, 1906).
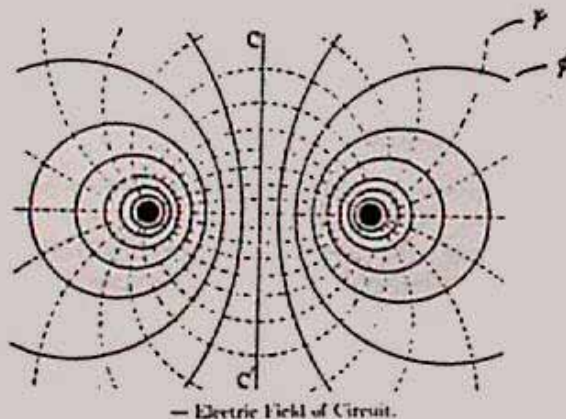

— Electric Field of Circuit.
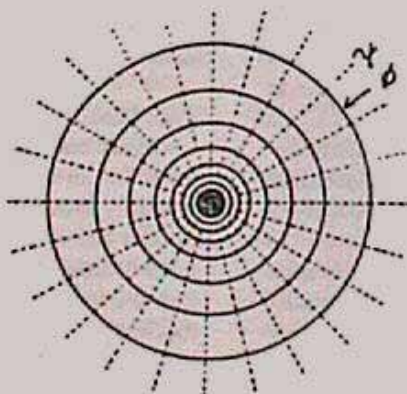
Fig. 1a

— Electric Field of Conductor.

Fig. 1b

PHYSICAL CHARACTERISTICS OF LINES OF FORCE

Consider the space between poles of a magnet or capacitor as full of lines of electric force. See Fig.1. These lines of force act as a quantity of stretched and mutually repellent springs. Anyone who has pushed together the like poles of two magnets has felt this springy mass. Observe Fig.2. Notice the lines of force are more dense along AB in between poles, and that more lines on A are facing B than are projecting outwards to infinity. Consider the effect of the lines of force on A. These lines are in a state of tension and pull on A. Because more are pulling on A towards B than those pulling on A away from B, we have the phenomena of physical attraction. Now observe Fig. 3. Notice now that the poles are like rather than unlike, more or all lines pull A away from B; the phenomena of physical repulsion.

MASS ASSOCIATED WITH LINES OF FORCE IN MOTION

The line of force can be more clearly understood by representing it as a tube of force or a long thin cylinder. Maxwell presented the idea that the tension of a tube of force is representative of electric force (volts/inch), and in addition to this tension, there is a medium through which these tubes pass. There exists a hydrostatic pressure against this media or ether. The value of this pressure is one half the product of dielectric and magnetic density. Then there is a pressure at right angles to an electric tube of force. If through the growth of a field the tubes of force spread sideways or in width, the broadside drag through the medium represents the magnetic reaction to growth in intensity of an electric current. However, if a tube of force is caused to move endwise, it will glide through the medium with little or no drag as little surface is offered. This possibly explains why no magnetic field is associated with certain experiments performed by Tesla involving the movement of energy with no accompanying magnetic field.

INDUCTANCE AS AN ANALOGY TO CAPACITY

Much of the mystery surrounding the workings of capacity can be cleared by close examination of inductance and how it can give rise to dielectric phenomena. Inductance represents energy storage in space as a magnetic field. The lines of force orientate themselves in close loops

Fig. 2

Fig. 3

surrounding the axis of current flow that has given rise to them. The larger the space between this current and its images or reflections, the more energy that can be stored in the resulting field.

MECHANISM OF STORING ENERGY MAGNETICALLY

The process of pushing these lines or loops outward, causing them to stretch, represents storing energy as in a rubber band. A given current strength will hold a loop of force at a given distance from conductor passing current hence no energy movement. If the flow of current increases, energy is absorbed by the field as the loops are then pushed outward at a corresponding velocity. Because energy is in motion an EMF must accompany the current flow in order for it to represent power. The magnitude of this EMF exactly corresponds to the velocity of the field. Then if the current ceases changing in magnitude thereby becoming constant, no EMF accompanies it, as no power is being absorbed. However, if the current decreases it represents then a negative velocity of field as the loops contract. Because the EMF corresponds exactly to velocity it reverses polarity and thereby reverses power so it now moves out of the field and into the current. Since no power is required to maintain a field, only current, the static or stationary field, represents stored energy.
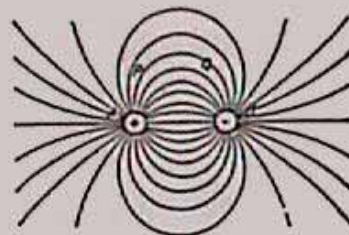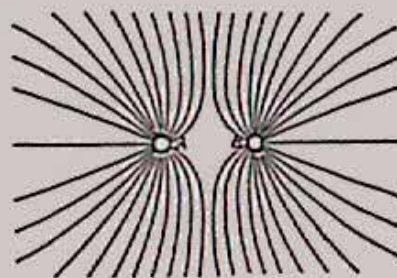
THE LIMITS OF ZERO AND INFINITY

Many interesting features of inductance manifest themselves in the two limiting cases of trapping the energy or releasing it instantly. Since the power supply driving the current has resistance, when it is switched off the inductance drains its energy into this resistance that converts it into the form of heat. We will assume a perfect inductor that has no self resistance. If we remove the current supply by shorting the terminals of the inductor we have isolated it without interrupting any current. Since the collapse of field produces EMF this EMF will tend to manifest. However, a short circuit will not allow an EMF to develop across it as it is zero resistance by definition. No EMF can combine with current to form power, therefore, the energy will remain in the field. Any attempt to collapse forces increased currents which pushes it right back out. This is one form of storage of energy.

INSTANT ENERGY RELEASE AS INFINITY

Very interesting (and dangerous) phenomena manifest themselves when the current path is interrupted, thereby causing infinite resistance to appear. In this case resistance is best represented by its inverse, conductance. The conductance is then zero. Because the current vanishes instantly the field collapses at a velocity approaching that of light. As EMF is directly related to velocity of flux, it tends towards infinity. Very powerful effects are produced because the field is attempting to maintain current by producing whatever EMF is required. If a considerable amount of energy exists, say several kilowatt hours* (250 KWH in a lightning stroke), the ensuing discharge can produce most profound effects and can completely destroy inadequately protected apparatus.

* The energy utilized by an average household in the course of one day.

ANOTHER FORM OF ENERGY APPEARS

Through the rapid discharge of inductance a new force field appears that reduces the rate of inductive EMF formation. This field is also represented by lines of force but these are of a different nature than those of magnetism. These lines of force are not a manifestation of current flow but of an electric compression or tension. This tension is termed voltage or potential difference.

DIELECTRIC ENERGY STORAGE SPATIALLY DIFFERENT THAN MAGNETIC ENERGY STORAGE

Unlike magnetism the energy is forced or compressed inwards rather than outwards. Dielectric lines of force push inward into internal space and along axis, rather than pushed outward broadside to axis as in the magnetic field. Because the lines are mutually repellent certain amounts of broadside or transverse motion can be expected but the phenomena is basically longitudinal. This gives rise to an interesting paradox that will be noticed with capacity. This is that the smaller the space bounded by the conducting structure the more energy that can be stored. This is the exact opposite of magnetism. With magnetism, the unit volume of energy can be though of as working in parallel but the unit volumes of energy in association with dielectricity can be thought of as working in series.

VOLTAGE IS TO DIELECTRICITY AS CURRENT IS TO MAGNETISM

With inductance the reaction to change of field is the production of voltage. The current is proportionate to the field strength only and not velocity of field. With capacity the field is produced not by current but voltage. This voltage must be accompanied by current in order for power to exist. The reaction of capacitance to change of applied force is the production of current. The current is directly proportional to the velocity of field strength. When voltage increases a reaction current flows into capacitance and thereby energy accumulates. If voltage does not change no current flows and the capacitance stores the energy which produced the field. If the voltage decreases then the reaction current reverses and energy flows out of the dielectric field.

As the voltage is withdrawn the compression within the bounded space is relieved. When the energy is fully dissipated the lines of force vanish.

AGAIN THE LIMITS ZERO AND INFINITY

Because the power supply which provided charging voltage has internal conductance, after it is switched off the current leaking through conductance drains the dielectric energy and converts it to heat. We will assume a perfect capacitance having no leak conductance. If we completely disconnect the voltage supply by open circuiting the terminals of the capacitor, no path for current flow exists by definition of an open circuit. If the field tends to expand it will tend towards the production of current. However, an open circuit will not allow the flow of current as it has zero conductance. Then any attempt towards field expansion raises the voltage which pushes the field back inwards. Therefore, energy will remain stored in the field. This energy can be drawn for use at any time. This is another form of energy storage.

INSTANT ENERGY RELEASE AS INFINITY

Phenomena of enormous magnitude manifest themselves when the criteria for voltage or potential difference is instantly disrupted, as with a short circuit. The effect is analogous with the open circuit of inductive current. Because the forcing voltage is instantly withdrawn the field explodes against the bounding conductors with a velocity that may exceed light. Because the current is directly related to the velocity of field it jumps to infinity in its attempt to produce finite voltage across zero resistance. If considerable energy had resided in the dielectric force field, again let us say several KWH, the resulting explosion has almost inconceivable violence and can vaporize a conductor of substantial thickness instantly. Dielectric discharges of great speed and energy represent one of the most unpleasant experiences the electrical engineer encounters in practice.

> "Unfortunately, to a large extent in dealing with dielectric fields the prehistoric conception of the electrostatic charge (electron) on the conductor still exists....and makes the consideration of dielectric fields unnecessarily complicated."
>
> -- Charles Proteus Steinmetz

ENERGY RETURNS TO MAGNETIC FORM

The powerful currents produced by the sudden expansion of a dielectric field naturally give rise to magnetic energy. The inertia of the magnetic field limits the rise of current to a realistic value. The capacitance dumps all its energy back into the magnetic field and the whole process starts over again. The inverse of the product of magnetic storage capacity and dielectric storage capacity represents the frequency or pitch at which this energy interchange occurs. This pitch may or may not contain overtones depending on the extent of conductors bounding the energies.

CHARACTERISTIC IMPEDANCE AS REPRESENTATION OF PULSATION OF ENERGY FIELD

The ratio of magnetic storage ability to that of the dielectric is called the characteristic impedance. This gives the ratio of maximum voltage to maximum current in the oscillatory structure. However, as the magnetic energy storage is outward and the dielectric storage is inward the total or double energy field pulsates in shape or size. The axis of this pulsation of force is the impedance of the system displaying oscillations and pulsation occurs at the frequency of oscillation.

ENERGY INTO MATTER

As the voltage or impedance is increased the emphasis is on the inward flux. If the impedance is high and rate of change is fast enough (perfect overtone series), it would seem possible the compression of the energy would transform it into matter and the reconversion of this matter into energy may or may not synchronize with the cycle of oscillation. This is what may be considered supercapacitance, that is, stable long term conversion into matter.

MISCONCEPTIONS OF PRESENT THEORY OF CAPACITANCE

The misconception that capacitance is the result of accumulating electrons has seriously distorted our view of dielectric phenomena. Also the theory of the velocity of light as a limit of energy flow, while adequate for magnetic force and material velocity, limits our ability to visualize or understand certain possibilities in electric phenomena. The true workings of free space capacitance can be best illustrated by the following example. It has been previously stated that dielectric lines of force must terminate on conductors. No line of force can end in space. If we take any conductor and remove it to the most remote portion of the universe, no lines of force can extend from this electrode to other conductors. It can have no free space

capacity, regardless of the size of the electrode, therefore it can store no energy. This indicates that the free space capacitance of an object is the sum mutual capacity of it to all the conducting objects of the universe.

FREE SPACE INDUCTANCE IS INFINITE

Steinmetz in his book on the general or unified behavior of electricity *THE THEORY AND CALCULATION OF TRANSIENT ELECTRIC PHENOMENA AND OSCILLATION*, points out that the inductance of any unit length of an isolated filamentary conductor must be infinite. Because no image currents exist to contain the magnetic field it can grow to infinite size. This large quantity of energy cannot be quickly retrieved due to the finite velocity of propagation of the magnetic field. This gives a non reactive or energy component to the inductance which is called electromagnetic radiation.

WORK OF TESLA, STEINMETZ AND FARADAY

In the aforementioned books of Steinmetz he develops some rather unique equations for capacity. Tesla devoted an enormous portion of his efforts to dielectric phenomena and made numerous remarkable discoveries in this area. Much of this work is yet to be fully uncovered. It is my contention that the phenomena of dielectricity is wide open for profound discovery. It is ironic that we have abandoned the lines of force concept associated with a phenomena measure in the units called farads after Faraday, whose insight into forces and fields has led to the possibility of visualization of the electrical phenomena.

QUESTION AS TO THE VELOCITY OF DIELECTRIC FLUX

It has been stated that all magnetic lines of force must be closed upon themselves, and that all dielectric lines of force must terminate upon a conducting surface. It can be inferred from these two basic laws that no line of force can terminate in free space. This creates an interesting question as to the state of dielectric flux lines before the field has had time to propagate to the neutral conductor. During this time it would seem that the lines of force, not having reached the distant neutral conductor would end in space at their advancing wave front. It could be concluded that either the lines of force propagate instantly or always exists and are modified or conjugate space exists within the same boundaries as ordinary space. The properties of lines of force within this conjugate space may not obey the laws of normally conceived space.

IMPORTANT REFERENCE MATERIAL
1. *ELECTRICITY AND MATTER*, J. J. Thompson, New York, 1906, Scribner's Sons, and 1904, Yale University.
2. *ELEMENTARY LECTURE ON ELECTRIC DISCHARGES, WAVES, AND IMPULSES AND OTHER TRANSIENTS*, C. P. Steinmetz, second edition, 1914, McGraw-Hill, reprinted 1989 by BSRF, Garberville CA 95440. ($19.95 + $2.50 P&H)
3. *THEORY AND CALCULATION OF TRANSIENT ELECTRIC PHENOMENA AND OSCILLATIONS*, C. P. Steinmetz, third edition, 1920, McGraw-Hill. Section III Transients in Space, Chapter VIII, Velocity of Propagation of Electric Field.

Stanislav ADAMENKO

Proton-21 Fusion

Proton 21

Chernovola Street, 48a
Vishnevoe,
Kievo-Svyatoshiskyi 08132
Ukraine

Phone/Fax +38044-5991046 --- Phone: +38044-5990826 --- Mob.phone: +38063-4256260
E-mail: edl@proton21.com.ua
Spoken languages: English, Russian and Ukrainian.

Downloadable Publications: http://www.proton21.com.ua/articles_en.html
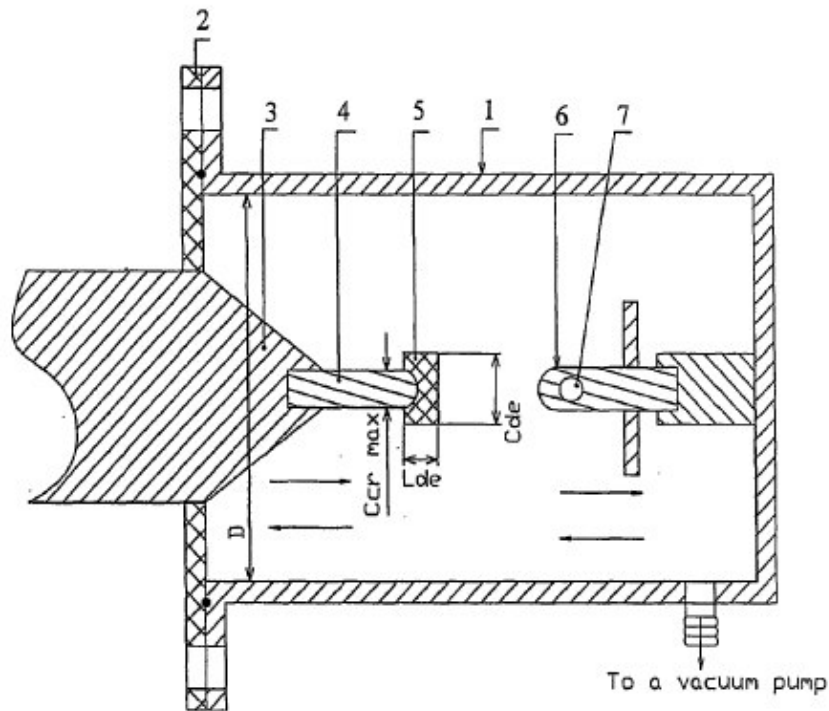
Fig. 1

Proton-21 Introduction
Tim Ventura : Proton 21 - The New Fusion

---

http://www.proton.21.com.ua

Proton-21

Welcome to Electrodynamics Laboratory "Proton-21" --- the pioneer in a new field of nuclear physics and of the new method and installation for laboratory nucleosynthesis.
Laboratory

Advancements over the span of the last fifty years in many fields of scientific and technological research such as Genetics, Physics, Telecommunications and other fields has outperformed progress in the field of Power Generation and Decontamination of Radioactive wastes. Progress in the fields of controlled thermonuclear synthesis and radioactive wastes decontamination technology also lag in comparison despite investments in research by the developed nations exceeding USD 100 billion.

One key issue that remains unresolved to this date in this particular field of research is the development of processes and technology for controlled ignition of self-sustaining nuclear reactions. For this, an adequate "initiator" of such controlled nuclear transformations is required; one which will result in a sustainable and controlled energy output and the transmutation of radioactive atoms into stable ones.

ElectroDynamics Lab (EDL) was founded in Kiev, Ukraine in 1999 by a group of Ukrainian engineers and scientists to address the specific problem of the adequate initiator. EDL's primary mission statement was to develop a novel, safe and effective technology for radioactive wastes decontamination. Today, privately funded EDL has evolved into a leading edge Research and Development center employing in excess of 120 researchers and scientists. The proven results of its research and its proprietary process, currently being patented, are able today to address the unresolved issue of nuclear wastes transformation.

EDL's results are revolutionary in their nature and are leading to important commercial and industrial breakthrough applications.

Primary Focus of EDL's Research:

The primary focus of EDL's research is based on a newly developed and self sustainable process which leads, through a controlled stimulation, to the collapse of condensed matter. In this collapsed state thus created, the effect of the Coulomb barrier becomes insignificant, and a rapid transmutation of elements and isotopes occurs and can be observed.

Main Research Results:

The first successful experiment was performed on February 24, 2000 in a specially created and proprietary set up. In fact, the 5,000+ successful experiments in controlled nuclei-synthesis performed since 1999, using various targets made of light, medium, or heavy elements; have allowed the research team at EDL to comprehend and evaluate this unique scientific breakthrough. The discovered process has been noted for its practical, environmentally friendly and extraordinary

energy efficient attributes.

Two major outcomes have emerged from this process:

First, the creation of an energy output far exceeding the initial impact.

Second, the creation of an array of unique nuclei-synthesis elements. These new elements were tested by leading scientific laboratories in Ukraine, Russia, USA, etc, and their artificial origin was confirmed.

The obtained results confirm the following:

The technological process created and validated by EDL is a unique and a pioneer experimental technology. It achieves record-breaking conditions for multiparticle nuclear fusion-fission reactions in condensed matter.

The laboratory installation developed by EDL has achieved high reproducibility results in reaching appropriate conditions in a compressed format necessary for the ignition of the collective multiparticle fusion-fission reactions.

The new elements resulting from the nuclceosynthesis created by the EDL process are free of ?-, ?-, ?-, -active isotopes. The radiation intensity of the products never exceeds the background intensity.

Elements marked with radioactive isotopes had their activity reduced due to full nuclear rebirth of a portion of the target element after the high energy impact.

The presence of long living isotopes in super heavy elements, on the border and beyond the Periodic Table, was revealed by the nuclear transmutation. These were synthesized in quantities many times exceeding those principally gained by classic methods at much reduced energy costs.

Objectives:

EDL's immediate objective is to finalize the pilot project of a new industrial prototype hundred times exceeding the performance of the existing laboratory setup.

EDL intends to continue and expand its research work in new fields of nuclear physics: including a) laboratory astrophysics, b) physics of collective synergetic interactions of previously unknown mechanisms, and c) energy creation and transformation processes.

EDL intends to develop a series of unique, radiation safe, and environmentally appropriate, industrial technologies to be used in commercial applications.

---

http://www.americanantigravity.com/articles/587/1/Proton-21---The-New-Fusion/Page1.html

Proton 21 - The New Fusion

by Tim Ventura

(09/12/2006)

Stanislav Adamenko on Emerging Fusion Research

By subjecting a copper electrode to a gigawatt pulse of energy, Dr. Stanislav Adamenko believes that he's found a new form of fusion that occurs inside a millimeter sized plasma that forms in the electrode. Has Adamenko finally cracked the code for solid-state fusion, and what potential for future energy does it hold? He joins us for the inside story on Proton 21's research in creating "The New Fusion"...

"Simply put, we're dealing with physical processes that exhibit a strongly nonlinear dependence. A good example to consider is the amount of the excess energy released in a LENR reaction versus the amount of the active substance involved in the experiment-- this is something that we've examined extensively in our own experimental research.

This nonlinear dependence explains why the majority of well-known LENR experiments demonstrate such extremely small yields in terms of energy production & nucleosynthesis, as well as why the results are so difficult to replicate or even accurately identify when they occur.

I'm sure that in the next five to ten years, collective & coherent nuclear reactions will become the focus of major investment in the field of nuclear-energy research, and it will lead to the beginning of a large-scale transition to a new, environmentally-friendly means of producing energy based on collective natural nuclear transformations." - Dr. Stanislav Adamenko

http://www.americanantigravity.com/documents/Proton-21-Interview.pdf

---

United States Patent Application   20050200256

Adamenko, Stanislav Vasilyevich

(September 15, 2005)

Method and Device for Compressing a Substance by Impact and Plasma Cathode Thereto

Abstract --- A method of compressing a substance by impact in axisymmetric relativistic vacuum diodes (RVD) having a plasma cathode and an anode-enhancer including: producing an axisymmetric target of a condensed substance, which functions at least as a part of the anode-enhancer; axially placing said electrodes; and pulse discharge of a power source via the RVD. To compress a substantial portion of the target substance to a superdense state, a plasma cathode is used in the form of a current-conducting rod comprising a dielectric end element having the perimeter of the rear end embracing the perimeter of the rod in the plane perpendicular to the axis of symmetry with a continuous gap, and the area of the emitting surface being greater than the maximum cross-section area of the anode-enhancer; the anode-enhancer is placed towards the plasma cathode so that the center of curvature of the working surface of the anode enhancer is located inside the focal space of the collectively self focussing electron beam; and the anode-enhancer is acted upon by an electron beam with an electron energy not smaller than 0.2 MeV, current density not smaller than 106 A/cm2 and duration not greater than 100 ns.

Correspondence Name and Address:
Abelman Frayne & Schwab : 150 East 42nd Street , New York NY 10017 US

U.S. Current Class: 313/238; U.S. Class at Publication: 313/238 ; Intern'l Class: H01J 001/00

Description

FIELD OF INVENTION

[0001] This invention relates:

[0002] to a method for impact compression of a condensed (liquid or, preferably, solid) substance to a superdense state in which pycnonuclear processes and inertial confinement fusion (ICF hereafter) may proceed, and

[0003] to a structure of devices based on relativistic vacuum diodes (RVD hereafter) including plasma cathodes, designed for carrying out the said method.

[0004] This technology is intended practically for transmutation of atomic nuclei of certain chemical elements into nuclei of other chemical elements with the purpose of:

[0005] Experimentally obtaining preferably stable isotopes of chemical elements including synthesis of stable transuranides;

[0006] Reprocessing radioactive waste containing long-lived isotopes into materials containing short-lived isotopes and/or stable isotopes, which is particularly important in decontamination of used gamma-ray sources, e.g., based on radioactive isotopes of cobalt widely used in industry and medicine.

[0007] In future, this method may be useful for obtaining energy by the ICF with utilization of preferably solid targets.

[0008] For the purpose of this description, the following terms as employed herein and in the appended claims refer to the following concepts:

[0009] "target" is a once used for impact compression dose of at least one arbitrary isotope of at least one chemical element, being a raw material for obtaining products of nuclear transformations and, optionally, a primary energy carrier for energy producing;

[0010] "impact compression" is an isoentropic impact action of a self-focusing converging density wave on at least a part of a target;

[0011] "superdense state" is such a state of at least a part of the target after it has been compressed by impact, at which state a substantial portion of the target substance transforms into electron-nuclear and electron-nucleonic plasma;

[0012] "pycnonuclear process" is such a recombinational interaction (`cold` in particular) between components of electron-nuclear and electron-nucleonic plasma of the target substance compressed to a superdense state causing at least the target isotopic composition change;

[0013] "plasma cathode" is such a consumable axisymmetric part of the RVD negative electrode which is able (in the beginning of the discharge pulse) to generate plasma shell (of the material of the near-surface layer) with the near zero electron work function;

[0014] "anode-enhancer" is such once used replaceable axisymmetric part of the RVD anode which may be completely produced of preferably conductive (in the main) material and used as a target itself in the simplest demonstration experiments, or has the shape of at least a single-layer shell of a hard strong material inside of which a selected target is fixed also axisymmetrically providing the acoustic contact, when such anode-enchancer is used for industrial needs;

[0015] "focal space" is such a volume in the RVD vacuum chamber which spatially confines a certain length of the common geometric symmetry axis of the RVD electrodes and in which (in the absence of obstacles and under pre-set values of the area of the emitting surface of the plasma cathode, energy of electrons and current density) a pinch of electron beam is possible due to collective self-focussing of relativistic electrons.

BACKGROUND ART

[0016] It is well known theoretically (see, e.g., U.S. Pat. No. 4,401,618) that in order to carry out a controlled nuclear fusion, it is necessary and sufficient:

[0017] First, to make a target of a microscopic size, the mass of which is usually of several micrograms to several milligrams,

[0018] Second, to fix the formed target in a space,

[0019] Third, to transfer a target substance into a superdense state by as uniform as possible impact compression of the target,

[0020] Fourth, to hold the substance of the target in such state the time enough for transmutation and/or nuclear fusion of atoms, which can be accompanied by energy release or absorption.

[0021] Worth to be mentioned that said limitations of the target mass are important mainly for the ICF because 1 mg of deuterium or a mixture of deuterium and tritium has an energy equivalent of about 20-30 kg of trinitrotoluene.

[0022] Also theoretically obvious is the fact that transmutation and/or nuclear fusion occur actually simultaneously with the attainment of a superdense state. Therefore, the efforts of researchers in the field of nuclear physics have been directed to the creation of most efficient methods and means for impact compression of substances so far.

[0023] And, finally, it is also theoretically clear that:

[0024] such a compression is possible only under the conditions of generating a high-power mechanical impulse of the duration order of several tens of nanoseconds and focussing this impulse onto a substantial area (up to the whole) of the surface of a target located in a securely isolated from the environment volume,

[0025] means for space-time compression of an energy flux are required for that purpose, such as primary energy source, at least one energy storage, at least one converter for transforming the accumulated energy into a mechanical impact impulse, and a mechanical striker for essentially isoentropic transfer of this impulse onto the target,

[0026] the problem of a sufficient set of such means and interactions between them can be solved in different ways depending on the purposes of the experiments with the impact compression of a substance provided that (when connected to an industrial power network) the first but not the only energy storage is usually a device based on a LC-circuit (see, e.g., collected articles: Energy Storage, Compression and Switching, edited by W. H. Bostick, V. Nardy and O. S. F. Zucker. Plenum Press, New York and London).

[0027] For years, efforts to realize said theoretical assumptions in practice had been directed only to the ICF the industrial mastering of which seemed to be sufficient for the humanity to move to "energy paradise".

[0028] For this reason, only gaseous deuterium or deuterium and tritium were used as an active substance from the very beginning, and targets were produced in the shape of tight empty spheres filled with microscopic (about 0,1 mg) portions of said hydrogen isotopes. Then, the beams of laser drivers were pointed at each such target uniformly and synchronously from many sides.

[0029] Heating of the shell caused an ablation (partial evaporation) of its outer portion. The expansion of the evaporated material was giving rise to reactive forces which caused implosion, i.e. uniform compression of the inner portion of the shell and active substance of the target in the direction to the sphere center (see, e.g., (1) U.S. Pat. No. 4,401,618; (2) J. Lindl, Phys. of Plasmas, 1995; (3) K. Mima et al., Fusion Energy, 1996. IAEA, Vienna, V. 3, p. 13, 1996).

[0030] This ICF scheme seemed to be irreproachable. Actually, the duration of laser radiation pulses can be brought to about 1 ns. This could ensure efficient time compression of an energy flux, and a sharp decrease in the target surface area could be a prerequisite for the space compression of said flux as well.

[0031] Unfortunately, the efficiency of lasers does not exceed 5%, that from very beginning made doubtable the effectiveness of the laser driver, taking into account Lawson criterion (J. D. Lawson, Proc. Phys. Soc., B.70, 1957). Further, the synchronization of lasers switching requires a sophisticated automatic control system. And, finally, the ablation is accompanied with significant losses in energy for heating the shell and target as a whole. Thus, nobody has brought so far the gaseous substance of the target to the superdense state and has got a positive yield of energy that could exceed the energy consumption for ICF initiation.

[0032] Known are the efforts to create the pressure and temperature sufficient to ignite fusion reactions by means of an acoustic driver, which must to induce cavitation in condensed, liquid in particular, targets (U.S. Pat. Nos. 4,333,796; 5,858,104 and 5,659,173). Particularly, International Publication WO 01/39197 describes:

[0033] (1) a cavitation fusion reactor comprising:

[0034] at least one source of mechanical supersonic oscillations,

[0035] preferably a plurality of sound conductors capable of transmitting these oscillations into the confined body of a target in a resonance mode with an increase in the energy flux density per unit of area,

[0036] means for heat removal in the form of a suitable heat exchanger;

[0037] (2) such method of use of the described reactor, which includes:

[0038] producing targets poorly conducting sound by pressing a fuel material required for nuclear fusion, preferably titanium deuteride, or lithium deuteride, or gadolinium dideuteride, etc., into a solid sound conducting matrix from a refractory metal (e.g. titanium, tungsten, gadolinium, osmium or molybdenum), introducing at least one such matrix with at least one such target into acoustic contact with at least one sound conductor connected to the source of mechanical supersonic oscillations,

[0039] acting upon such matrix by a train of supersonic impulses in a resonance mode, which acting causes mechanical-and-chemical destruction of deuterides and fluidization of targets due to the conversion of kinetic energy of the mechanical oscillations into the heat and essentially simultaneously induces cavitation in the `liquid` targets due to `evaporation` of deuterium from the targets, i.e. appearance of vapor bubbles and their collapse under the pressure of the host material,

and

[0040] terminating the process after nuclear fusion reactions with energy release inside the targets are completed.

[0041] Use of solid (in the initial state) targets and supersonic mechanical impulses for their impact compression seems to be rather attractive. Unfortunately, like lasers, the sources of ultrasound have insignificant efficiency. Moreover, unlike lasers, these sources yield rather small density of power in the impulse, which makes it necessary to put the system `ultrasound source--deuteride target` in the resonance mode. However, even in this mode, the major portion of energy is spent for heating targets and dissipates. Therefore, impact compression of the substance to a superdense state was not achieved even in case of prolonged pumping of energy into the target.

[0042] Accordingly, the problem of creation of feasible methods and means for impact compression of the substance to a superdense state remains urgent.

[0043] Long-range approach to its solution is based on use of RVD known since the beginning of the 20.sup.th century (see, e.g., (1) C. D. Child, Phys. Rev., V. 32, p. 492, 1911; (2)1. Langmuir, Phys. Rev., V. 2, p. 450, 1913).

[0044] Each RVD comprises a vacuum chamber inside of which a cathode and an anode are fixed, said cathode and anode are connected to an electric charge storage via a pulse discharger. With a sufficiently great charge and a short duration of a discharge pulse, such diodes are capable of providing an explosive electron emission from the surface of the cathode and acceleration of electrons to relativistic velocity with the efficiency of more than 90%.

[0045] Exactly in this function of generators and accelerators of powerful electron beams, the relativistic vacuum diodes had been the object of attention of physicists during the whole 20.sup.th century, and numerous enhancements to the design of such diodes as the whole and particularly cathodes for them were intended for the space-time compression of energy in the electron beams and shaping these beams to required spatial form.

[0046] An effort in creation of a method for compressing a substance by impact in the RVD for ICF is known from U.S. Pat. No. 3,892,970. This method includes:

[0047] First, producing a target in the shape of a symmetric pellet of a condensed (preferably solid) substance from a frozen thermonuclear fuel (i.e. deuterium or a mixture of deuterium and tritium),

[0048] Second, placing the target between the RVD electrodes, in other words, into the volume, into which the output of means for anode plasma generation is opened, and

[0049] Third, practically synchronous injection an anode plasma and compression of the target with impulse (at 10 ns) annular impact by means of short-circuit of a powerful current (the order of 100 TW and the energy of 1 MJ) via the anode plasma.

[0050] However, such method does not provide the compression of the target substance to a superdense state and holding it in such state long enough for nuclear fusion with energy release because the size of the target is obviously smaller than the path length of the electrons with the energy of about 1.5 MeV. That is why the kinetic energy of electrons practically immediately converts into thermal energy in the whole body of the target causing a spatial thermal explosion of the nuclear fuel. Further, it is extremely difficult in the known method to synchronize hitting of the freely flying target into the center of an annular RVD cathode with the discharge of the source of energy and producing a flat plasma anode. Accordingly, focussing of the electron current on the

target can be achieved only occasionally despite of adjusting the discharge voltage and the anode plasma density.

[0051] An RVD based device for impact compression of a substance, known from the same patent, comprises a spherical vacuum chamber fitted with a heat exchanger and provided with a channel for targets feeding, two annular cathodes located symmetrically with respect to the central plane of the vacuum chamber, additional plasma injecting device located between the cathodes and forming a flat plasma anode directly prior to the discharge of the supplying circuit.

[0052] And finally, the known from the same patent cathode has a current carrying part and a focussing tip made in the shape of a ring with a sharp edge for increasing an electric field gradient thereon. The edge of such cathode is covered with its own layer of plasma during a discharge.

[0053] It is actually impossible to transfer a tangible portion of energy of the annular electron beam to the target in such RVD, because the beam is already on the pinch threshold at the very moment of its formation and is unstable (especially in combination with such plasma anode, which parameters change essentially both during each pulse and from one pulse to another).

[0054] Therefore, it is desirable that the anode should be made from solid substance and either itself functions as a target or incorporates a target, and that the pinch should be prevented in the gap between the electrodes and self-focussing of the electron beam be achieved on the anode surface simultaneously in the process of the discharge.

[0055] It is astonishing, that, according to the available data, main attention in development of such means was paid only to shaping the RVD cathode emitters while using essentially flat anodes. A striking example of such approach can be a RVD based pulse source of electrons that comprises a plasma cathode having a shaped plate of a dielectric material and a conductive cover of precisely the same shape for a portion of the surface of said plate (SU 1545826 A1). Under a pulse discharge, such a composite cathode can generate an electron beam, which is not subject to the pinch and has the shape that corresponds to the shape of the dielectric plate.

[0056] However, such as much as possible uniform compression of the target, which is necessary for the ICF and pycnonuclear processes, is unachievable by shaping the electron beam only. Therefore, the described RVD and its analogues can not be feasibly applied in the processes of impact compression of a substance up to a superdense state.

[0057] Problems in suppressing the pinch in the gap between the electrodes and in providing the self-focussing of electron beams on the target surface made many physicists so pessimistic that they came to a conclusion of principal inapplicability of RVD's as drivers for transmutation processes and ICF (see, e.g., (1) James J. Duderstadt, Gregory Moses, Inertial Confinement Fusion. John Wiley and Sons, New York, 1982. (2) E. P. Velikhov, S. V. Putvinsky. Fusion Power. Its Status and Role in the Long-Term Prospects. In 4.2.2. Drivers for Inertial Controlled Fusion/http://relcom.website.ru/wfs-moscow. etc).

[0058] Nevertheless, the research in this direction continued.

[0059] Thus, the nearest to the invention, as for the technical essence, method and means that are in principle applicable for impact compression of a substance were disclosed at International Conference dedicated to particle accelerators (S. Adamenko, E. Bulyak et al. Effect of Auto-focusing of the Electron Beam in the Relativistic Vacuum Diode. In: Proceedings of the 1999 Particle Accelerator Conference, New York, 1999) and in a later article (V. I. Vysotski, S. V. Adamenko et al. Creating and Using of Superdense Micro-beams of Relativistic Electrons. Nuclear Instruments and Methods in Physics Research A 455, 2000, pp. 123-127).

[0060] Method of impact compression of a substance, which can be easily perceived by those skilled in the art from the above-mentioned sources of information, includes:

[0061] producing a target in the shape of such an axisymmetric part from a condensed substance that is at least a part of a RVD anode (namely, in the shape of a hemispheric tip of a needle-like anode-enhancer having a diameter of the order of several micrometers),

[0062] placing the target in the RVD fitted also with an axisymmetric plasma cathode, which is located practically on the same geometric axis with said anode-enhancer and is spaced by several millimeters therefrom, and

[0063] pulse discharge of the power source via the RVD in the self-focussing mode of an electron beam on the surface of the anode-enhancer.

[0064] Device using the described method for impact compression of a substance was made on the basis of a RVD. It comprises:

[0065] a strong gas-tight housing a part of which is made of a current-conducting material shaped in axial symmetry to confine a vacuum chamber, and

[0066] an axisymmetric plasma cathode and an axisymmetric anode-enhancer fixed in said chamber practically on the same geometric axis of which at least plasma cathode is connected to a pulsed high-voltage power source.

[0067] The cathode was made in accordance with a classical scheme: `current-conducting (usually metallic) rod converging in the direction to the anode ended with dielectric element`, the perimeter and the area of the operative end of the latter element being no greater than the respective perimeter and the cross section of said rod (Mesyats G. A. Cathode Phenomena in a Vacuum Discharge: The Breakdown, the Spark and the Arc. Nauka Publishers, Moscow, 2000, p. 60).

[0068] Shaping the both electrodes in the specific geometric forms allowed the pinch to be suppressed in the RVD gap, and to sharpen the electron beam to provide it's self-focussing on a small portion of the surface of the anode-enhancer.

[0069] However, such essentially point action on the anode-enhancer is suitable only for demonstration of the RVD applicability for impact compression of a substance, but it cannot provide the compression of a substantial portion of the target body to a superdense state at each pulse discharge.

BRIEF DESCRIPTION OF THE INVENTION

[0070] Therefore, the invention is based on the problem:

[0071] First, by way of changing the conditions of performing the steps, to create such a method for impact compression of an essential portion of the target substance to a superdense state that could be fulfilled at each pulsed RVD discharge,

[0072] Second, by way of changing the shapes and relative positions of electrodes in RVD, to create such a device for compressing a substance by impact, which would ensure effective application of the method, and

[0073] Third, by way of changing the shapes and dimension ratios of conductive and dielectric parts, to create such an axisymmetric plasma cathode which would provide the most economic

effective application of the method.

[0074] The first aspect of the problem is solved so that in the method of compressing a substance by impact using a RVD having an axisymmetric vacuum chamber with current-conducting walls, an axisymmetric plasma cathode and an axisymmetric anode-enhancer, including:

[0075] producing a target in the shape of an axisymmetric part of a condensed substance that functions as at least a part of the anode-enhancer,

[0076] placing the anode-enhancer into the RVD chamber with a gap towards the plasma cathode practically on the same geometric axis therewith, and

[0077] pulse discharge of the power source via the RVD in the electron beam self-focussing mode on the surface of the anode-enhancer, according to the invention

[0078] the axisymmetric plasma cathode is used in the form of a current-conducting rod comprising a dielectric end element having the perimeter of the rear end embracing the perimeter of said rod at least in the plane perpendicular to the axis of symmetry of the cathode with a continuous gap, and the area of the emitting surface being greater than the maximum cross-section area of the anode-enhancer,

[0079] the anode-enhancer is placed with such a gap towards the plasma cathode that the center of curvature of the working surface of the anode-enhancer is located inside the focal space of the collectively self-focussing electron beam, and

[0080] the anode-enhancer is acted upon by an electron beam having the electron energy not less than 0.2 MeV, current density not less than 10.sup.6 A/cm.sup.2 and duration not greater than 100 ns.

[0081] The results of application of this method happen to be quite unexpected even for the inventor who had been striving for them more than 10 years. Thus, using the simplest monometallic targets of highly pure copper, tantalum and other materials enabled to demonstrate experimentally the following:

[0082] after being compressed by impact, a tangible portion of each target mass flew apart and precipitated as aggregates of transmutation products on the walls of the RVD vacuum chamber and/or on a shield mentioned below;

[0083] some aggregates were rather homogeneous as for their elemental composition;

[0084] in the aggregates were certainly detected not only stable isotopes of known chemical elements which had not been present in the substance of the targets as admixtures but also relatively stable isotopes of unknown now and not yet identified transuranides;

[0085] isotopic composition of the products of transmutation of the target substance essentially differed from the reference data on the isotopic composition of the same elements in the Earth's crust,

[0086] the attempts to detect positive yield of thermal energy from the zone of transmutation failed up to now.

[0087] The above distinguishes the transmutation according to the invention in essence from the traditional transmutation attained by bombardment of solid targets (e.g., made from the same copper or molybdenum) by ions (deuterons as a rule) produced from sources with magnetically

confined anode plasma and run in complicated and dangerous in operation pulse accelerators to obtain power fluxes of the order of 1 kW at the ion energy of more than 5 MeV (see, e.g., U.S. Pat. No. 5,848,110). In fact, only known in advance mainly radioactive isotopes of known in advance chemical elements, e.g., Zn.sup.65, Mo.sup.99, I.sup.123, O.sup.15, etc. can be produced in such processes, whereas the method according to the invention is applicable at least for fusion of transuranides in quantities sufficient for chemical study.

[0088] Mentioned above and described in detail below results of carrying out the method according to the invention allow to suppose that the electron beam is collectively self-focussing on a essential portion of the surface of the anode-enhancer and excite in its near-surface layer a mechanical soliton-like density impulse converging to the symmetry axis of the target. This impulse transmits in the isoentropic manner the energy received from the electron beam to a portion of the target substance near its symmetry axis. The leading edge of said impulse tends to a spherical form. Therefore, as the soliton-like impulse reduces to a certain small volume with the center on the target symmetry axis, its leading edge becomes steeper, and the density of energy therein increases to a magnitude sufficient for the substance to reach a superdense state enough for pycnonuclear processes to proceed. That is the reason why the simplest (and, what is very important, practically safe in operation) RVD type electron accelerator with a minimum power consumption provides (as will be shown in detail below) the transmutation nuclear reactions with the yield of a wide spectrum of isotopes.

[0089] The first additional feature consists in that used in the relativistic vacuum diode plasma cathode has a pointed current-conducting rod, the dielectric end element of this cathode is provided with an opening for setting on said rod, and the setting part of said rod together with the pointed end is located inside the opening. This allows to control at least partially the gap between the RVD electrodes and to stabilize the plasma cathode operation, that is especially important for experimental optimization of the impact compression process.

[0090] The second additional feature consists in that the target is formed in the shape of an insert into the central part of the RVD anode-enhancer, the diameter of said insert is chosen in the range of 0.05 to 0.2 of the maximum cross-sectional dimension of the anode-enhancer. This allows to use any material as an object of compression to a superdense state irrespective of its electric conductivity and its usage both in a solid and a liquid state. Naturally, a liquid should be encapsulated either directly in the solid shell of the anode-enhancer or in an individual shell, which, after closure, must be inserted with the maximal acoustic transparency into the anode-enhancer.

[0091] The third additional feature consists in that at least that part of the anode-enhancer, which is directed to the plasma cathode, is spheroidally formed prior to mounting in the RVD. This allows the mechanical soliton-like impulse of density to be concentrated in a microscopically small volume and, as a result of this concentration, to provide the impact compression of an each target substance up to a superdense state with a yield of 10.sup.17 to 10.sup.18 atoms of transmuted products even with the minimum (the order of 300-1000 J) energy consumption for a single `shot`.

[0092] The fourth additional feature consists in that the target is formed in the shape of a spheroidal body tightly fixed inside the anode-enhancer in such a way that the centers of the inner and outer spheroids practically coincide. This allows to increase essentially the yield of a transmuted material.

[0093] The fifth additional feature consists in that the anode-enhancer is acted upon by an electron beam having the electron energy up to 1.5 MeV, current density not greater than 10.sup.8 A/cm.sup.2 and duration not greater than 50 ns. These parameters are sufficient for pycnonuclear processes to proceed in targets consisting of the most stable atoms of chemical elements from the `middle part` of the periodic table.

[0094] The sixth additional feature consists in that the current density of the electron beam is not more than 10.sup.7 A/cm.sup.2, which is sufficient for effective impact compression of the majority of condensed target materials.

[0095] The seventh additional feature consists in that the residual pressure in the RVD vacuum chamber is maintained at the level not greater than 0.1 Pa, which is quite sufficient to prevent a gas discharge between the RVD electrodes.

[0096] The second aspect of the problem is solved in that in a device for impact compression of a substance, which is based on RVD and is comprised of:

[0097] a strong gas-tight housing a part of which is made of a current-conducting material shaped in axial symmetry to confine a vacuum chamber, and

[0098] an axisymmetric plasma cathode and an axisymmetric anode-enhancer mounted with a gap in the vacuum chamber practically on the same geometric axis of which at least the cathode is connected to a pulse high-voltage power source, according to the invention

[0099] the plasma cathode is made in the form of a current-conducting rod comprising a dielectric end element having the perimeter of the rear end embracing the perimeter of said rod at least in the plane perpendicular to the axis of symmetry of the cathode with a continuous gap, and the area of the emitting surface being greater than the maximum cross-section area of the anode-enhancer,

[0100] at least one of the electrodes is provided with a means for adjusting the gap between the electrodes, and

[0101] the distance from the common geometric axis of said plasma cathode and anode-enhancer to the inner side of the current-conducting wall of the vacuum chamber is greater than 50d.sub.max, where d.sub.max is a maximum cross-sectional dimension of the anode-enhancer.

[0102] The RVD having the combination of the mentioned features is useful at least for transmutation of nuclei of certain chemical elements into nuclei of other chemical elements as it was disclosed above in the commentaries to the subject matter of the method according to the invention.

[0103] The first additional feature consists in that the current-conducting rod of the plasma cathode is pointed and the dielectric end element is provided with an opening for setting on said rod the setting part of which is located together with the pointed end inside the said opening. Such design makes it possible to stabilize the plasma cathode operation and at least partially to adjust the gap between the electrodes in the RVD by shifting the dielectric end element with respect to the current-conducting rod.

[0104] The second additional feature consists in that the anode-enhancer has a circular shape in the cross section and is completely produced from a current-conducting in its main mass material to be transmuted. This allows to demonstrate the effect of transmutation on the simplest specimens of pure metals and metal alloys and to product transuranides in particular.

[0105] The third additional feature consists in that the anode-enhancer is made composite and comprises at least a one-layer solid shell and an inserted target tightly embraced by this shell, said target being in the shape of a body of revolution and made of an arbitrary condensed material with a diameter in the range of (0.05-0.2).multidot.d.sub.max, where d.sub.max is a maximum cross-sectional dimension of the anode-enhancer. This allows to carry out the impact compression of a substance not only with the purpose of transmutation of atomic nuclei but also with the purpose of producing energy in the volume where pycnonuclear processes proceed with substantial (at least by

an order) overshooting the Lawson criterion.

[0106] The fourth additional feature consists in that at least one shield preferably of current-conducting material is mounted in the tail part of the anode-enhancer. It can capture a portion of products of pycnonuclear processes produced as a result of the impact compression of the main target to a superdense state and function as an additional target for nuclear interaction at the scattering of transmuted particles of the anode-enhancer.

[0107] The fifth additional feature consists in that said shield is a thin-wall body of revolution with the diameter not less than 5d.sub.max which is spaced from the nearest to the plasma cathode end of said anode-enhancer by the distance up to 20d.sub.max, where d.sub.max is a maximum cross-sectional dimension of the anode-enhancer. Such shield promotes self-focussing of the electron beam on the major portion of the anode-enhancer surface and captures a tangible portion of products of pycnonuclear processes.

[0108] The sixth additional feature consists in that said thin-wall body of revolution has a flat or concave surface at the side of the anode-enhancer. This significantly retards precipitation of the pycnonuclear processes products on the vacuum chamber walls.

[0109] The third auxiliary aspect of the problem is solved in that in the axisymmetric plasma cathode having a current-conductive rod for connection to a pulsed high-voltage power source and a dielectric end element according to the invention the perimeter of the rear end of the dielectric element embraces the perimeter of said rod with a continuous gap at least in the plane perpendicular to the axis of symmetry of the cathode.

[0110] In case of a breakdown along the surface, the dielectric end element of such cathode is practically instantly covers with plasma. The electron work function in such plasma is close to zero. Therefore, the current in the RVD electrode intermediate gap and, respectively, the total electron energy in the electron beam practically coincide with physically permissible maximum values of these parameters. That is why the plasma cathode of the invention is especially useful in RVD based devices for impact compression of a substance.

[0111] The first additional feature consists in that the current-conducting rod of the plasma cathode is pointed and the dielectric end element is provided with an opening for setting on said rod the setting part of which is located together with the pointed end inside the said opening. As mentioned above, this makes it possible to use the plasma cathode at least as one of means for adjusting the gap between the RVD electrodes.

[0112] The second additional feature consists in that the dielectric end element has a blind opening, which is more preferable in adjusting the gap between the RVD electrodes.

[0113] The third additional feature consists in that the dielectric end element has a through opening, that is more preferable for controlling the formation of a plasma cloud and, respectively, stabilizing of the RVD operation at the moment of breakdown.

[0114] The fourth additional feature consists in that the dielectric end element is made of a material selected from the group consisting of carbon-chain polymers with single carbon-to-carbon bonds, paper-base laminate or textolite type composite materials with organic binders, ebony wood, natural or synthetic mica, pure oxides of metals belonging to III-VII groups of the periodic table, inorganic glass, sitall, ceramic dielectrics and basalt-fiber felt.

[0115] This list of preferable materials allows selection of dielectrics taking into account various requirements. For example, said organic materials and basalt-fiber felt are useful in terms of

convenience in producing dielectric end elements and handling them while adjusting the gap between the RVD electrodes, and the rest of the mentioned inorganic materials are useful in terms of wear resistance and minimum effect upon the residual pressure in the RVD vacuum chamber after each next `shot`.

[0116] The fifth additional feature consists in that the dielectric end element has a developed surface to facilitate formation of a plasma cloud in case of a breakdown.

[0117] The sixth additional feature consists in that the minimum cross-sectional dimension of said dielectric element is C_{de} min=(5-10).multidot.C_{cr} max, and the length of said element is l_{de}=(10-20).multidot.C_{cr} max, where C_{cr} max is a maximum cross-sectional dimension of the current-conducting rod. Such relative dimensions of parts of the plasma cathode completely exclude the pinch in the RVD electrode intermediate gap and ensure the electron beam self-focussing on a substantial part of the anode-enhancer.

[0118] It will be understood that:

[0119] In selection of specific embodiments of the invention, arbitrary combinations of said additional features with the primary inventive concept are possible,

[0120] This inventive concept can be supplemented and/or specified within the scope defined by the claims using general knowledge of those skilled in the art,

[0121] The preferable embodiments of the invention disclosed below are in no way intended to limit the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0122] The essence of the invention will now be explained (in examples of nuclei transmutation in pycnonuclear processes) by detailed description of the device and method for compressing a substance by impact with reference to the accompanying drawings, in which:

[0123] **FIG. 1** is a structural layout diagram of electrodes in the RVD, the adjustable geometric parameters being pointed out;
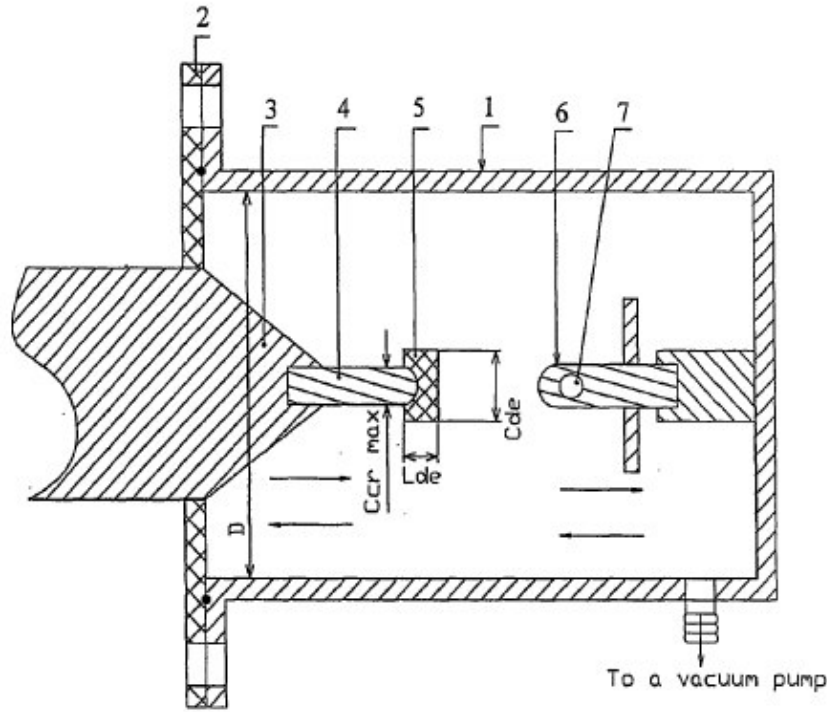
Fig. 1

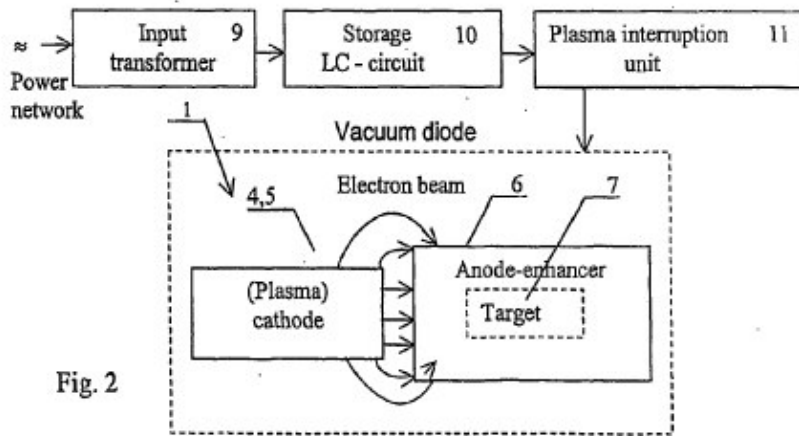[0124] **FIG. 2** is a block diagram of a pulsed high-voltage power source;

Fig. 2

[0125] **FIG. 3** is a preferable structure of an axisymmetric plasma cathode (a section along the symmetry axis);
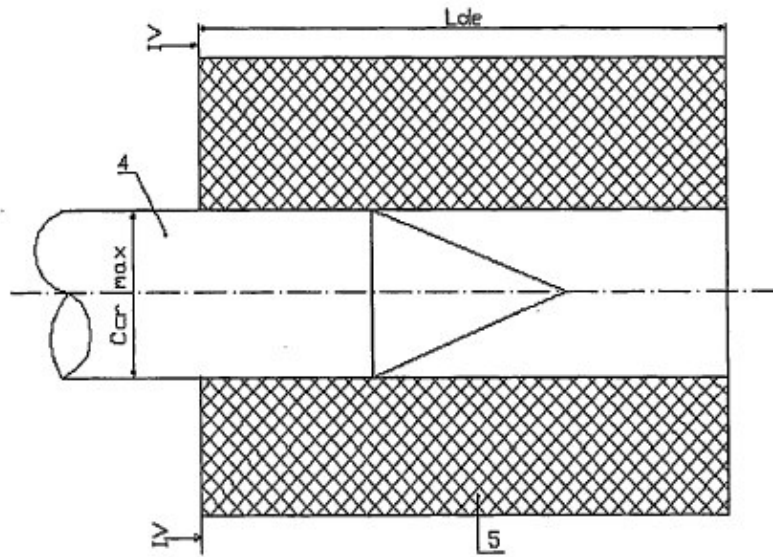
Fig. 3

[0126] **FIG. 4** is a view of the rear end of the axisymmetric plasma cathode taken along the plane IV-IV (with a cross section of the current-conducting rod);
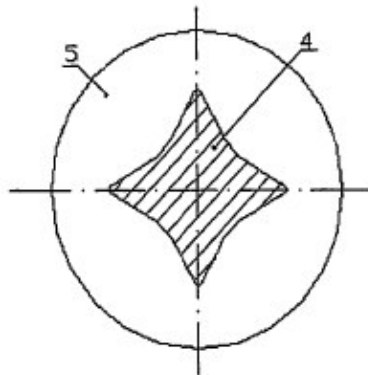

Fig. 4

[0127] **FIG. 5** is an integral axisymmetric anode-enhancer used directly as a target for demonstration of impact compression of a substance to a superdense state (a section along the symmetry axis);
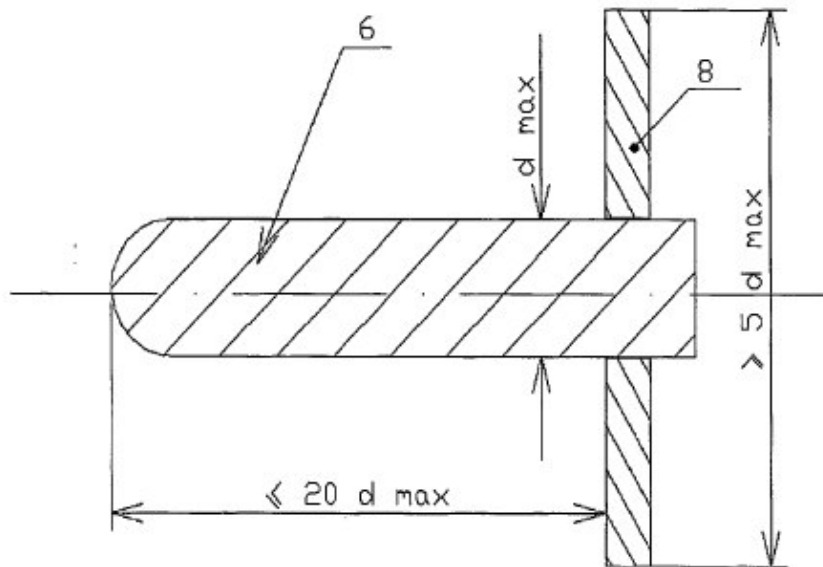
Fig. 5

[0128] **FIG. 6** is a hollow-body axisymmetric anode-enhancer with an inserted spherical target designed, e.g., for at least partial transmutation of long-lived radioactive isotopes of selected chemical elements into stable isotopes of as a rule other chemical elements (a section along the symmetry axis);
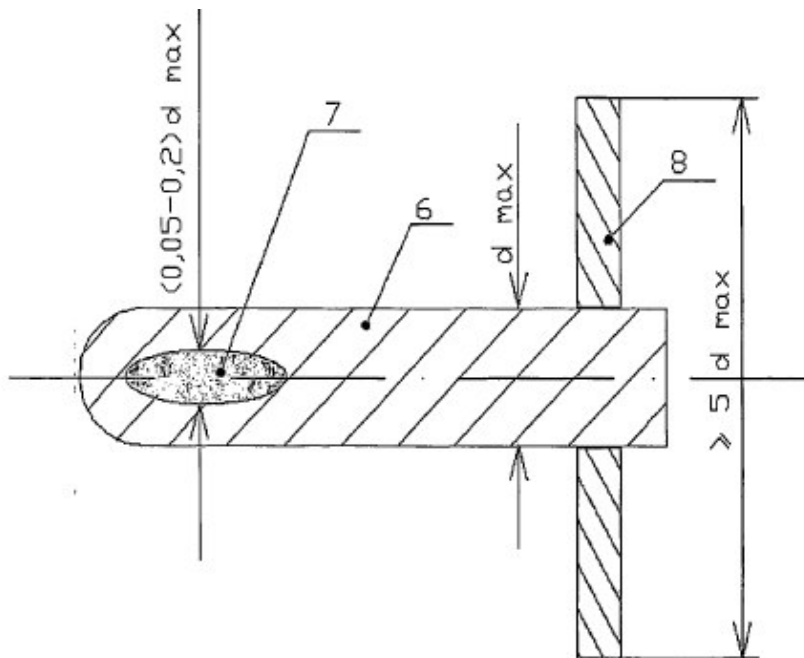
Fig. 6

[0129] **FIG. 7** is a graphic charts of voltage and current change in the RVD discharge pulse;
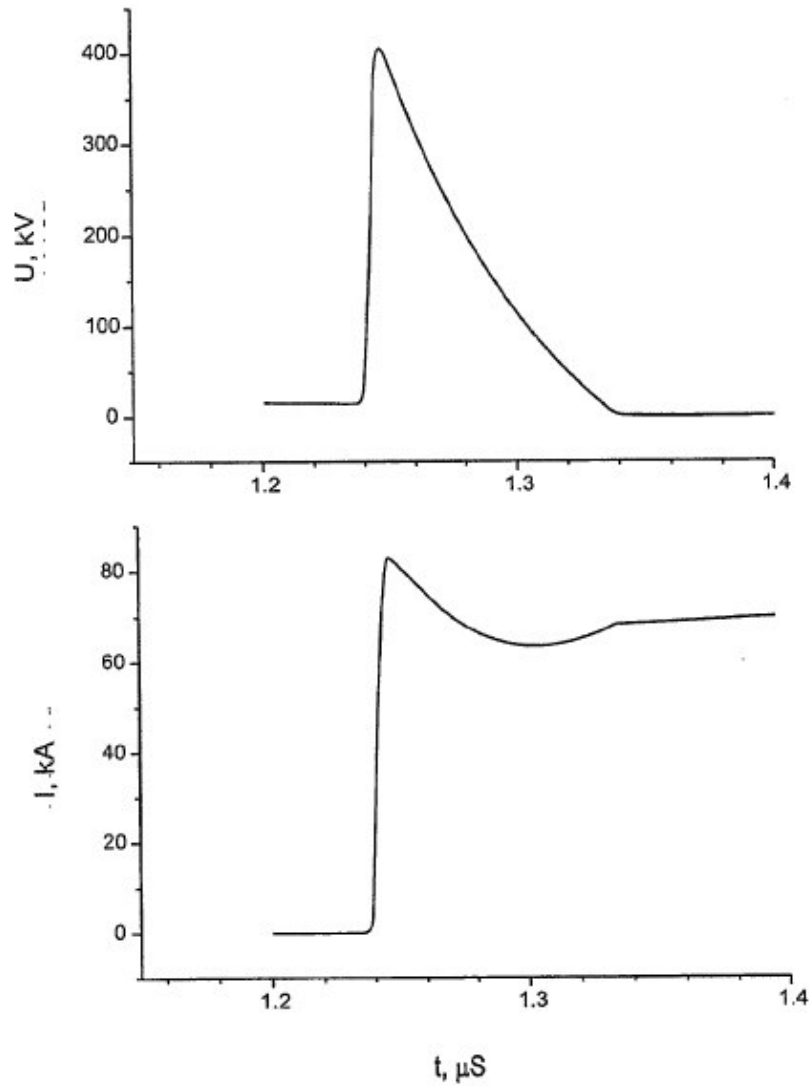
[0130] **FIG. 8** is a diagram of absolute (by weight %) distribution of chemical elements according to the mass of atomic nuclei in products of transmutation of chemically pure copper;
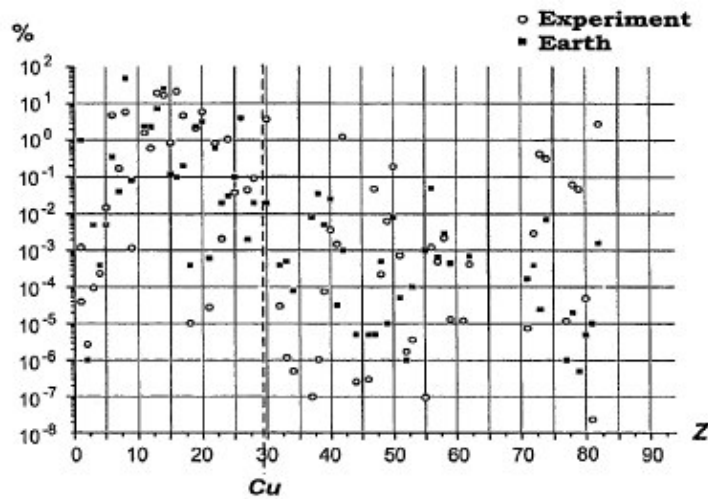
Fig. 8

[0131] **FIG. 9** is a diagram of relative distribution of the same chemical elements according to the mass of atomic nuclei in products of transmutation of chemically pure copper;
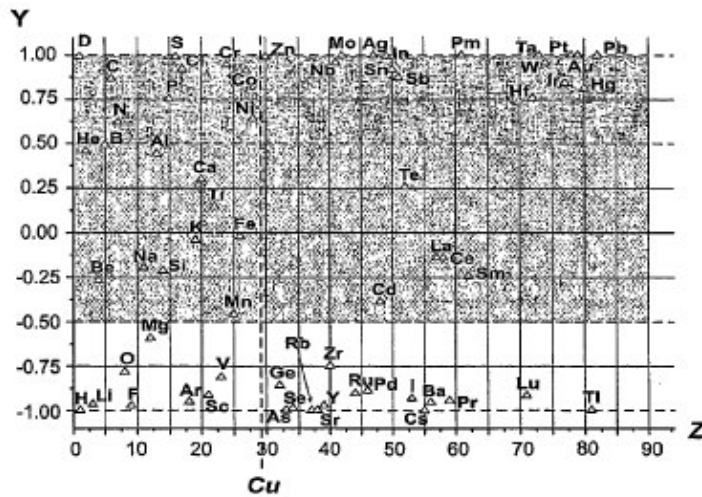
Fig. 9

[0132] **FIG. 10** is a diagram of absolute (by weight %) distribution of chemical elements according to the mass of atomic nuclei in products of transmutation of chemically pure tantalum;
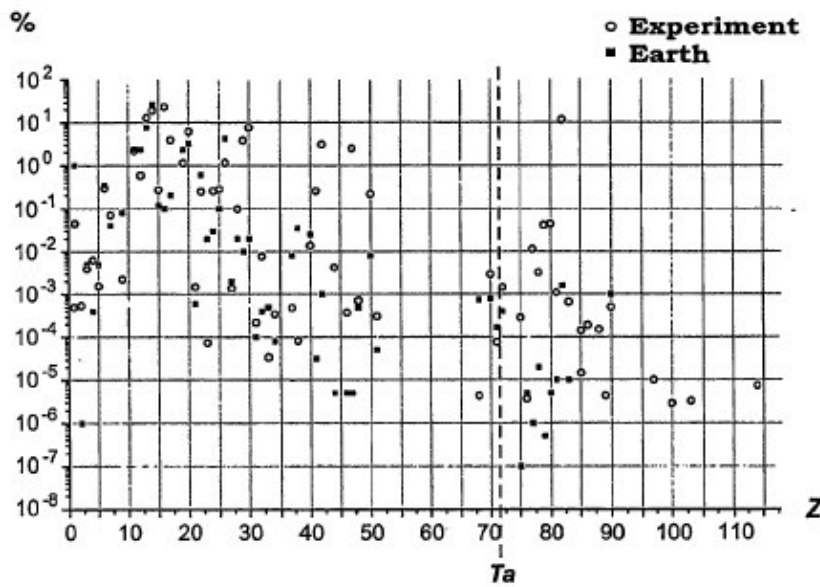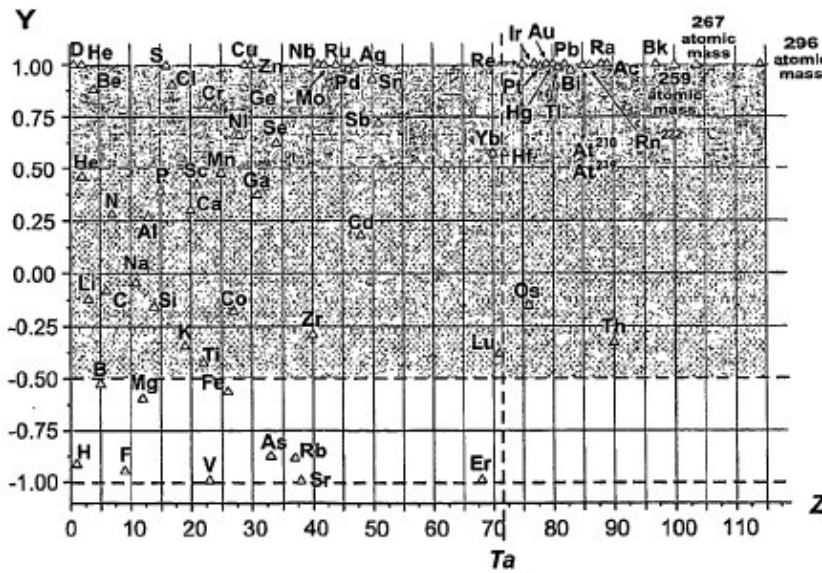

Fig. 10

[0133] **FIG. 11** is a diagram of relative distribution of the same chemical elements according to the mass of atomic nuclei in products of transmutation of chemically pure tantalum;

Fig. 11

[0134] **FIG. 12** is a diagram of absolute (by weight %) distribution of chemical elements according to the mass of atomic nuclei in products of transmutation of chemically pure lead;
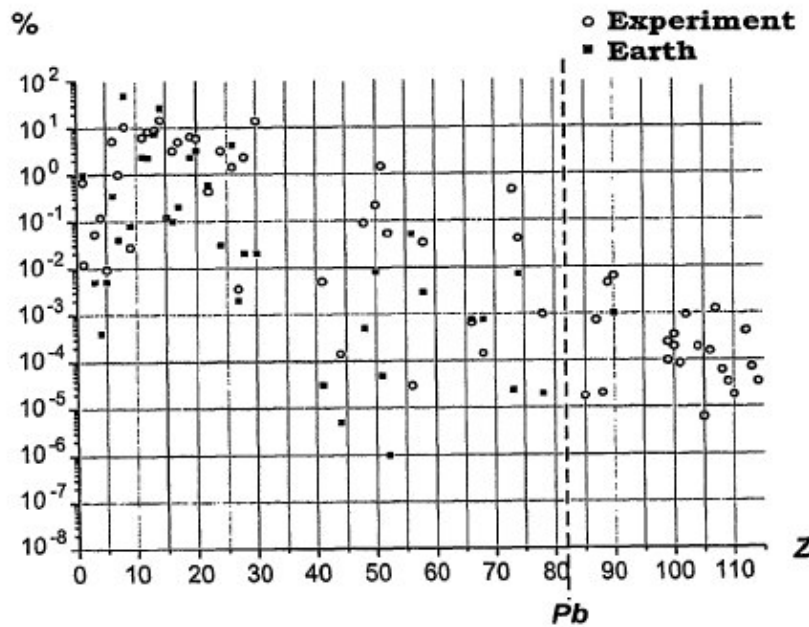

Fig. 12

[0135] **FIG. 13** is a diagram of relative distribution of the same chemical elements according to the mass of atomic nuclei in products of transmutation of chemically pure lead;
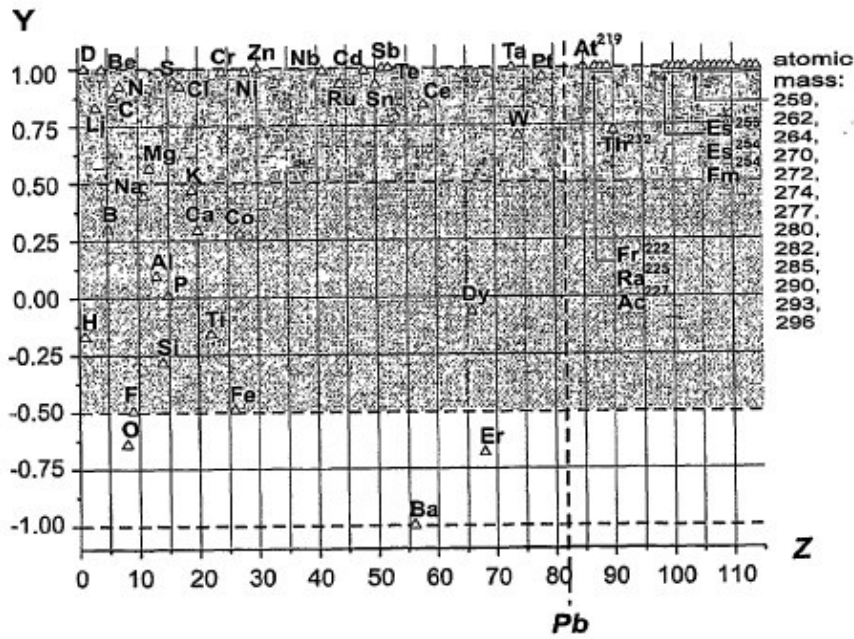
Fig. 13

[0136] **FIG. 14** is a reference mass spectrum of isotopes of nickel obtained by a study of samples of natural nickel that coincides with the natural abundance of such isotopes in the Earth's crust;
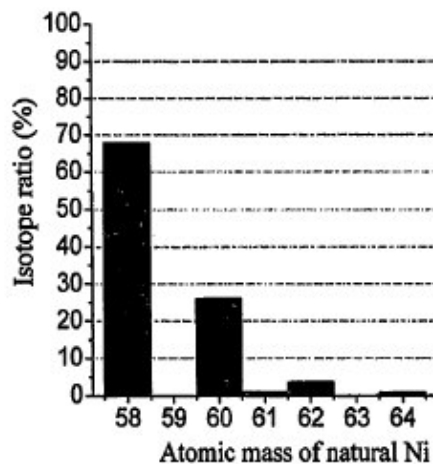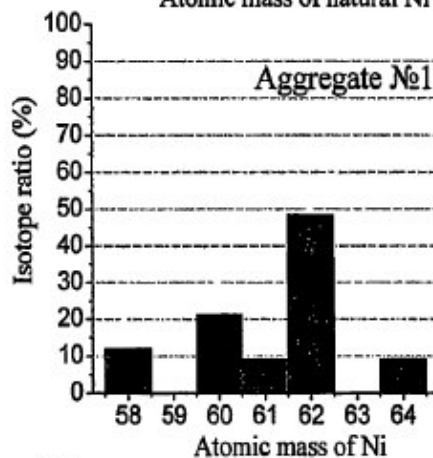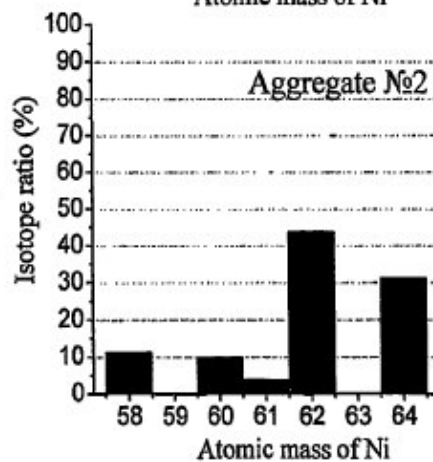
Fig. 14

Fig. 15

Fig. 16

[0137] **FIG. 15** is a mass spectrum of relative distribution of isotopes of nickel in one of aggregates on a copper shield obtained in the result of pycnonuclear processes in an integral copper target (specimen No. 1);

[0138] **FIG. 16** is the same mass spectrum as in FIG. 15 obtained in a study of another aggregate of atoms of nickel on the same shield;

[0139] **FIG. 17** is a microphotography of a product of impact compression of a substance to a superdense state in the form of an iron hemisphere with a spherical cavity driven into a copper shield and partially etched by an ion beam.
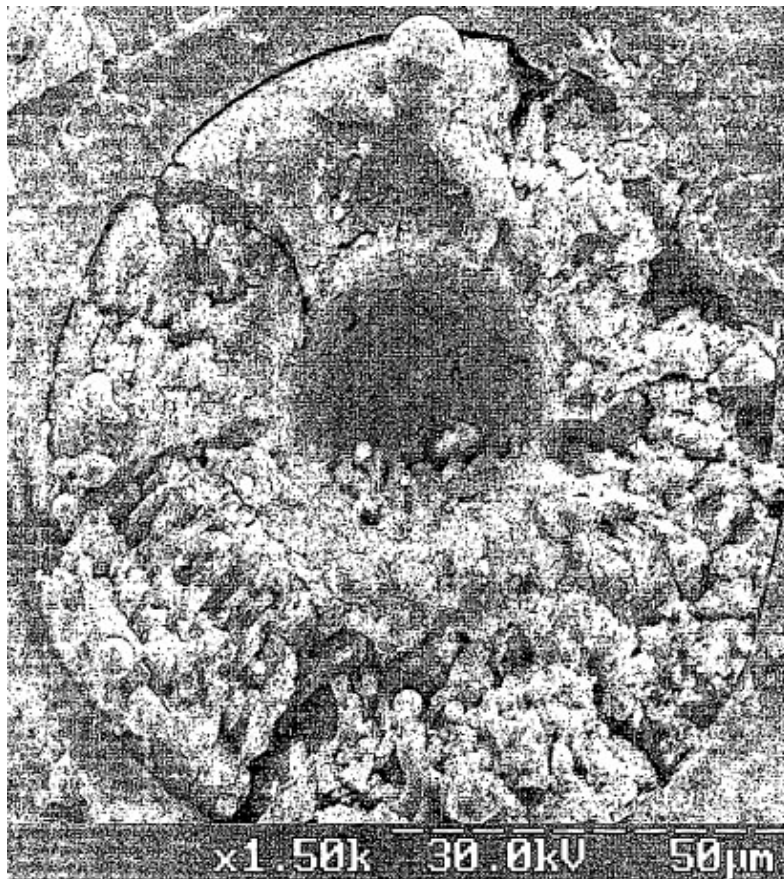
Fig. 17

BEST MODE FOR CARRYING OUT THE INVENTION

[0140] The device according to the invention (FIG. 1) is made on the basis of a RVD. The essential parts thereof are:

[0141] a strong gas-tight housing 1 which is made partly from a current-conducting material (for example, copper or stainless steel) shaped axisymmetrically to confine a vacuum chamber closed, in the operation condition, with a dielectric end cover 2 and connected when required via at least one pipe (not shown) to a vacuum pump;

[0142] a non-consumable axisymmetric current-conducting rod 3 preferably circular in the cross section and preferably tapered in the longitudinal section, rigidly and tightly fixed in the cover 2 and intended for connection of RVD to a pulsed high-voltage power source described below;

[0143] a replaceable (as worn out) axisymmetric plasma cathode comprising:

[0144] a current-conducting rod 4 having its tail fixed in the rod 3 and

[0145] a dielectric end element 5 rigidly connected with the rod 4, said element 5 having the area of the working end exceeding the cross-section area of the rod 4;

[0146] an axisymmetric anode-enhancer 6 which can be either integral or including a target 7, the maximum cross-section area of said anode-enhancer being smaller than the area of the emitting

surface of the dielectric end element 5;

[0147] optionally, a shield 8 preferably of current-conducting material is mounted on the tail part of the anode-enhancer 6;

[0148] at least one (not shown specially but denoted with pairs of arrows under the contours of the plasma cathode 4, 5 and the anode-enhancer 6) mean for adjusting a gap between the electrodes, i. e. the space between the point of intersection of the end surface of the dielectric element 5 of the plasma cathode with its symmetry axis and similar point at the end of the anode-enhancer 6 both lying practically along the same geometric axis.

[0149] The RVD pulsed high-voltage power source (FIG. 2) in the simplest case can be a well known to those skilled in the art system that includes at least one capacitive or inductive energy storage with at least two plasma (or other) current interrupters. However, preferable are `hybrid` sources of power (see, e.g., 1. P. F. Ottinger, J. Appl. Phys., 56, No. 3, 1984; 2. G. I. Dolgachev et al. Physics of Plasma, 24, No. 12, p. 1078, 1984) which comprise connected in series (FIG. 2):

[0150] an input transformer 9 with means for connection to an industrial power network and a high-voltage output winding,

[0151] a storage LC-circuit 10 comprising suitable (not shown) capacitors and inductors,

[0152] a unit 11 for plasma interruption of discharge current in the LC-circuit comprising a set of well known to workers in the art plasma guns symmetrically located in one plane, the number of which (up to 12, in particular) usually being equal to the number of capacitors in the LC-circuit.

[0153] Of course, besides of said power units, the RVD pulsed high-voltage power sources usually incorporate means (not shown) for measuring pulse current and voltage, such as at least one Rogovski belt and at least one capacitive voltage divider.

[0154] A source of such type was used for the RVD supply in experiments on compressing a substance by impact to a superdense state described below. This source could provide the following values of the controlled parameters:

[0155] Mean energy of beam electrons . . . 0.2 to 1.6 MeV

[0156] Electron beam duration . . . not greater 100 ns

[0157] Electron beam power . . . $2.10.\sup.9$ to $0.75-10.\sup.12$ W

[0158] High-voltage discharge current . . . 10 kA to 500 kA.

[0159] For effective carrying out of the method of impact compression of a substance, it is recommended to follow a number of additional conditions when producing individual parts of the RVD and targets.

[0160] Thus, it is important that the distance from the common geometric axis of the plasma cathode 4, 5 and anode-enhancer 6 to the inner side of the current-conducting wall of the housing 1 exceed $50d.\sub.max$, where $d.\sub.max$ is a maximum cross-sectional dimension of the anode-enhancer 6.

[0161] It is desirable that the plasma cathode (FIG. 3) has its current-conducting rod 4 pointed and dielectric end element 5 provided with a blind or through opening. This element 5 must be fitted on the rod 4 with a slight tightness so that the setting part of the rod 4 together with the pointed end be

found inside said opening. The shape of such opening in its cross-section and the cross-section of the rod 4 (provided the conditions of axial symmetry be followed) may be not circular (e.g., oval, elliptic, star-like, as shown in FIG. 4, etc.).

[0162] It is also desirable that the perimeter of the rear end of the dielectric element 5 (FIG. 4) at least in the plane perpendicular to the symmetry axis of the plasma cathode embrace the perimeter of the current-conducting rod 4 with a continuous gap. It is to be understood that this condition can be provided in various shapes of cross-sectional outline of the rod 4 and element 5.

[0163] It is highly preferable that the dielectric end element 5 of the plasma cathode have a developed outer surface, e.g., initially rough, as shown in FIG. 4, or deliberately corrugated at least in one arbitrary direction. Particularly, element 5 can be used having a shape of an axisymmetric multiple-pointed star in their cross-sections.

[0164] It is desirable that the minimum cross-sectional dimension $C_{de\ min}$ of said element 5 be in the range of $(5\text{-}10) \cdot c_{cr\ max}$, and the length l_{de} be in the range of $(10\text{-}20) \cdot c_{cr\ max}$, where $c_{cr\ max}$ is a maximum cross-sectional dimension of the current-conducting rod 4.

[0165] Said element 5 of the plasma cathode can be made of any dielectric material, which (at the chosen shape and dimensions) is capable for a breakdown under the chosen working voltage in the gap between the RVD electrodes.

[0166] It is preferable that such material be selected from the group consisting of carbon-chain polymers with single carbon-to-carbon bonds (e.g., polyethylene, polypropylene etc.), paper-base laminate or textolite type composite materials with organic binders, ebony wood, natural or synthetic mica, pure oxides of metals belonging to III-VII groups of the periodic table, inorganic glass, sitall, basalt-fiber felt and ceramic dielectrics.

[0167] As it was mentioned above, the axisymmetric anode-enhancer 6 can be:

[0168] either integral (FIG. 5) and consisting of an arbitrary solid usually current-conducting in its mass preferably metallic material (including both pure metals and their alloys), e.g., copper, tantalum, lead, etc.;

[0169] or have (FIG. 6) at least a one-layer preferably spherical shell 6 made of preferably current-conducting material and an axisymmetric inserted target 7 tightly fixed in said shell and made of an arbitrary condensed (solid or liquid) substance to be compressed by impact.

[0170] A maximum diameter of the axisymmetric inserted target 7 is preferably selected in the range of $(0.05\text{-}0.2) \cdot d_{max}$, where d_{max} is a maximum cross-sectional dimension of the anode-enhancer 6 as a whole. Irrespective of the geometric shape of the target 7 body, it must be fixed inside the anode-enhancer 6 so that the center of its surface curvature practically coincide with the curvature center of the working surface of the anode enhancer 6. It is very important that dislocation density in the material of the anode-enhancer 6 and in the material of the target 7 be as small as possible and that an acoustic contact be provided between these parts.

[0171] Said shield 8, which can be mounted in the tail part of the anode-enhancer 6, is usually made from a current-conducting material as a preferably thin-wall body of revolution. The diameter of said shield 8 must be not smaller than $5d_{max}$ and it's distance from the working end of the anode-enhancer 6 must be not greater than $20d_{max}$, where d_{max} is a maximum cross-sectional dimension of the anode-enhancer 6. It is desirable that said shield 8 have a flat or concave surface at the side of the working end of the anode-enhancer 6 (FIGS. 5 and 6).

[0172] The method for impact compression a substance using the described device usually includes:

[0173] a) connecting the current-conducting rod 4 of the aforesaid plasma cathode to the non-consumable current-conducting rod 3;

[0174] b) producing a set of replaceable axisymmetric anodes-enhancers 6 preferably having their working ends rounded in one of the following variants:

[0175] either in the form of integral pieces of the material to be compressed by impact (for transmutation or any other nuclear transformation),

[0176] or in the form of preferably one-layer shells wherein targets 7 are tightly inserted, said targets being made of the material (preliminarily encapsulated, as required) to be compressed by impact (for transmutation or any other nuclear transformation);

[0177] c) (optionally) fitting at least some of the anodes-enhancers 6 with current-conducting shields 8 made of copper, lead, niobium, tantalum etc.;

[0178] d) placing each next anode-enhancer 6 in the vacuum chamber of the RVD housing 1 practically on the same geometric axis with the plasma cathode 4, 5;

[0179] e) adjusting the gap between the working ends of the dielectric end element 5 of the plasma cathode and the anode-enhancer 6 in such a way that the center of curvature of the working surface of the anode-enhancer 6 is located inside the focal space of the collectively self-focussing electron beam at a pulse discharge of the power source via the RVD;

[0180] f) closing the vacuum chamber by fitting the end dielectric cover 2 on a flange of the strong gas-tight current-conducting housing 1 of the RVD;

[0181] g) vacuuming the chamber in the RVD housing 1, which is carried out:

[0182] at least twice prior to the first `shot` upon the target (pumping out the air first and then at least once blowing down the chamber with clean dry nitrogen and re-vacuuming to the residual pressure of gases not greater than 0.1 Pa), and

[0183] at least once prior to each next `shot`, if the residual pressure exceeds said value;

[0184] h) connecting an external high-voltage power source of the RVD to a power network via the input transformer 9 and storing the electric energy required for an experiment in the LC-circuit 10;

[0185] i) discharging the LC-circuit 10 via the unit 11 for plasma interruption of the current pulse, the non-consumable axisymmetric current-conducting rod 3, the replaceable current-conducting rod 4 and the dielectric end element 5 on the RVD anode-enhancer 6 with generation of an electron beam having the electron energy not less than 0.2 MeV, current density not less than $10.^6$ A/cm.^{2} (and preferably not more than $10.^8$ A/cm.^{2}, and more preferably not more than $10.^7$ A/cm.^{2}) and duration not greater than 100 ns (and preferably not more than 50 ns);

[0186] j) removing of the products obtained after the compression of a portion of the target substance to a superdense state from the vacuum chamber of the RVD housing 1 and studying these products by the commonly used techniques.

[0187] The experimental targets were intended to:

[0188] demonstrate the transmutation effect as a result of the impact compression of a substance to a superdense state (integral anodes-enhancers 6 in accordance with FIG. 5); and

[0189] evaluate the possibility of radioactive materials deactivation (hollow-body anode-enhancers 6 with inserted target 7 according to FIGS. 1 and 6). As mentioned above, such target 7 must be inserted into the anode-enhancer 6 providing the maximum acoustic transparency of their junction contact, and the curvature centers of the working surfaces of the both said components must coincide practically.

[0190] The integral anodes-enhancers 6 had average radius of curvature of the working ends in the range of 0.2 to 0.5 mm, as a rule. They were made, particularly, of chemically pure metals, such as copper, tantalum and lead. Such anodes-enhancers 6 can be stored outdoors. An oxide film that appears on the surface (especially of copper and lead) does not prevent and, according to some observations, even enhances their use in accordance with the above-mentioned purposes.

[0191] The inserted targets 7 had a shape of pellets made of available Co.sup.60 isotope and artificial mixtures of Co.sup.56 and Co.sup.58 produced by irradiation of natural nickel on U-120 cyclotron in Nuclear Research Institute of National Academy of Sciences of Ukraine.

[0192] The use of such targets required additional shells (not shown) made of polycaprolactam (capron) that are mounted inside the RVD vacuum chambers. These shells enveloped both RVD electrodes and reduced significantly the risk of the radioactive cobalt precipitation on the walls of the housing 1 and the RVD cover 2.

[0193] The initial radioactivity values and those attained after transmutation of utilized cobalt isotopes were controlled by ordinary germanium-lithium gamma-ray detectors.

[0194] More than thousand of adjustment experiments had been carried out prior to beginning of the operational experiments on impact compression of a substance to a superdense state. The results of adjustment experiments helped to select and more exactly define (taken into account the dimensions of parts 4,5 of the plasma cathode and anode-enhancer 6, and specific parameters of the charge) the width of the gap between the RVD electrodes in order to provide hitting of the target curvature centers into the focal space of the RVD electron beam.

[0195] The operational experiments were carried out in series. Their number varied in different series and ranged from 50 (at transmutation of radioactive cobalt) to several hundreds. All the experiments had a through numbering.

[0196] The initial data on the used targets, discharge parameters and obtained results were recorded in logbooks under sequential numbers.

[0197] The shape of voltage and current pulses in the gap between the RVD electrodes and actual duration of the electron beam were checked with current and voltage oscillograms, typical examples are shown in FIG. 7. These and many other oscillograms demonstrate that the duration of the electron beam does not exceed 100 ns.

[0198] It is important to note that the electron beam current (despite a sharp voltage drop on the RVD plasma cathode) only slightly decreases as compared to the peak value. This proves the efficiency of usage of the plasma cathodes 4,5.

[0199] After statistical processing of the results of the adjustment experiments with regard to the controlled parameters of the electron beam generation process approximate dimensions for the

electrodes gap and approximate values of the focal space volume were determined (see Table 1).

1TABLE 1 Dependence of the gap between the electrodes and the focal space volume on the rest of the parameters of the electron beam generation process Mean Dimensions of the Dimensions of the Gap energy of dielectric element of working end of the between Focal beam the plasma cathode, anode-enhancer the space electrons, mm Curvature Area, electrodes, volume, MeV Diameter Length radius, mm mm.sup.2 mm mm.sup.3 0.2 4.0-6.0 5.0 0.25 0.75 2.0-3.0 0.02 0.5 16.0-24.0 8.75 0.45 2.4 7.0-10.5 0.12 1.0 45.0-67.0 9.5 0.73 6.7 36.5-55.0 about 0.5 1.5 80.0-120.0 15.25 about 1.0 about 12.3 .gtoreq.59 about 1.3

[0200] Following these limits of the gap between the RVD electrodes in the operational experiments ensured:

[0201] First, hit of the curvature centers of the working surfaces of the integral anodes-enhancers 6 (and in case of using targets 7, hit of the curvature centers of their surfaces too) into the focal space of the collectively self-focussing electron beam and

[0202] Second, reveal of the effect of transmutation after each pulsed discharge of the RVD power source.

[0203] Moreover, following the parameters listed in Table 1, the current density on the surface of the working end of the anode-enhancer 6 was possible to establish within the range of 10.sup.6 A/cm.sup.2 to 10.sup.8 A/cm.sup.2. For the most part of impact compression experiments, this parameter was maintained within the range of 10.sup.6 A/cm.sup.2 to 10.sup.7 A/cm.sup.2.

[0204] The results of all the operational experiments looked rather uniform, namely:

[0205] Products of transmutation in the form of a wide spectrum of practically stable isotopes of various (both light and heavy, and even super-heavy transuranides) chemical elements appeared from a portion (at the average about 30% by weight) of the initial material;

[0206] These products and chemically unchanged residues of integral anodes-enhancers 6 (and inserted targets 7) flew apart from the volume of impact compression primarily in the direction opposite to the plasma cathode and precipitated as drop-shaped aggregates of various forms and dimensions on the walls of the vacuum chamber of the RVD and/or on the shields 8, if applicable.

[0207] Said products were collected for study.

[0208] Electron microprobe-analyzers REMMA-102, Tesla and Cameca were used for detecting of separated aggregates of transmutation products and determination of their position on the surface (on shields 8 in particular) with the purpose of subsequent study of the elemental and isotopic composition (and in certain cases, for registration of the shape of such aggregates). Jamp10S model of an Auger spectrometer by JEOL, time-of-flight pulsed laser mass-spectrometer designed by Kiev's National T. G. Shevchenko University (Ukraine), ionic microprobe-analyzer CAMECA's IMS-4f and FINNIGAN's highly sensitive mass-spectrometer VG9000 were used for the study of the elemental and isotopic composition of said products.

[0209] As a result in all the operational experiments on impact compression of integral anodes-enhancers 6 to a superdense state, an essential discrepancy was observed between their initial composition (practically one chemical element for all targets in each series) and elemental and isotopic composition of the transmutation products.

[0210] In order to make certain of that, let's observe FIGS. 8 to 13 wherein vertical dash lines

indicate the charge of an initial chemical element's nucleus.

[0211] It should be noted, that the isotopes of chemical elements which were not present in the initial material of the target but appeared in the products of transmutation are indicated in FIGS. 8, 10 and 12:

[0212] by light circles according to their concentration in said products of pycnonuclear processes,

[0213] by black squares according to their concentration in the Earth's crust.

[0214] Nuclei charges and percentage by weight of these isotopes are easy to determine using the numerical data on the X and Y axis respectively.

[0215] With light triangles and adjacent chemical symbols, FIGS. 9, 11 and 13 show relative deviations Y of concentrations (% by weight) of certain chemical elements from natural abundance ratio that were calculated by formula: $1 \frac{A - B}{A + B} = Y$, where :

[0216] A is a ratio of a certain isotope of a certain chemical element in the products of transmutation, and

[0217] B is a ratio of the same isotope of the same chemical element in the Earth's crust.

[0218] As it's clearly seen from FIGS. 8, 10 and 12, in the process of transmutation of initial copper, tantalum and lead appears a wide spectrum of isotopes of various chemical elements with smaller and greater Z nuclear charges in comparison to the nuclear charge of parent element.

[0219] However, the greater is the nuclear charge of the target material the higher is the probability of production of stable transuranides (including those not identified yet) with atomic mass of greater than 250 atomic mass units (and in some to be checked cases, up to 600 amu and greater).

[0220] The presence of atoms having such masses was detected at first by the method of ion mass spectrometry and then was proved by well known methods of Rutherford alpha and proton back-scattering.

[0221] Moreover, FIGS. 9, 11 and 13 clearly show that concentrations of substantial portion of chemical elements in transmutation products statistically reliably exceed (more than in three times and some elements in 5-10 and more times) their normal concentrations in the Earth's crust (see areas marked out with dark colour within the range of Y values from 0.5 to 1.0). This obviously proves the artificial origin of such products of pycnonuclear processes.

[0222] As for changes in elemental and isotopic composition, similar results were obtained also in experiments with targets of radioactive cobalt. However, in these cases the main attention was paid to reduction in radioactivity in products of the target spread due to transmutation of radioactive nuclei of cobalt into non-radioactive isotopes of other chemical elements, in those part of the target which was in the focal space.

[0223] This reduction essentially varied in separate samples, that can be explained by difference in density of acoustic contact between the inner walls of cavities in anodes-enhancers and the material of inserted targets 7 (see data from a log-book in Table 2).

2TABLE 2 Radioactivity reduction in the products of cobalt targets spread Reduction in Reduction in Reduction Sample gamma- Sample gamma- Sample in gamma- number activity, % number activity, % number activity, % 2397 47.6 2479 2.2 2588 46.5 2398 10.7 2481 22.8 2600 33.3 2425 21.6 2534 29.5 2769 28.9 2426 17.0 2558 22.9 2770 36.4

[0224] Thus, sample No. 2479 was deactivated only by 2.2% whereas sample No. 2397 and No. 2588 lost more than 45% of their activity in the result of transmutation.

[0225] Further, as it was definitely established, the distribution of isotopes in conglomerates of atoms of each chemical element detected in products of pycnonuclear processes is essentially differed from the distribution of the same isotopes in the Earth's crust.

[0226] The brightest example of such drastic discrepancy is the difference between the normal distribution of isotopes of nickel in natural samples (FIG. 14) and in two aggregates of nickel atoms produced by transmutation of copper targets (FIGS. 15 and 16). Thus, the content of Ni.sup.58 isotope is up to 70% in the mass of natural nickel, while the proportion of Ni.sup.58 in products of copper transmutation (with Cu.sup.63 isotope dominating in the target) exceeds 10%. Similarly, content of Ni.sup.60 isotope essentially (usually twice) decreased whereas content of Ni.sup.62 sharply increased.

[0227] And at last, a bright evidence of impact compression of a substance to a superdense state by the method according to the invention is an ejection from the RVD focal space rather big bodies whose shape visually proves the existence of necessary conditions for a short-term appearance of at least electron-nuclear and, even, electron-nucleonic plasma in said space.

[0228] Thus, on FIG. 17, presented essentially iron hemisphere comprising 93% by weight Fe with admixtures of silicon and copper isotopes on the background of the copper shield.

[0229] Obviously, this hemisphere is a fraction of a spherical body formed from a substantial part of the copper anode-enhancer 6 (sample No. 4908 according to the log-book of the applicant). It has an outer diameter about 95 .mu.m and a practically concentric spherical cavity with a diameter of about 35 .mu.m. The roughness on the major portion of the ring end of the hemisphere can be explained by the crack of the initial sphere.

[0230] It is easy to assume that in the experiment with the sample No. 4908, the center of the focal space of the electron beam practically coincided with the center of the target curvature. In this case, soliton-like density impulse focussed itself in the volume that is represented as a spherical cavity in the disclosed product.

INDUSTRIAL APPLICABILITY

[0231] The device for compressing a substance by impact may be produced using commercially available components, and the method according to invention may be a basis for development and implementation of highly efficient and environmentally safe technologies for:

[0232] First, synthesis of stable transuranides, which is greatly important for broadening the knowledge about the nature;

[0233] Secondly, transmutation of nuclei of known chemical elements for experimental production of their stable isotopes and for neutralization of radioactive materials (including atomic-industry waste) containing long-lived radioactive isotopes; and

[0234] Third, ICF using chemical elements widely spread in nature and their compositions as fuel.

http://www.springerlink.com/content/2614047n462k3264/

Vacuum Electric Discharge Initiated by Accelerated Nanoparticles

S. V. Adamenko (1, 2), P. A. Bereznyak (1, 2), I. M. Mikhailovskii (1, 2), V. A. Stratienko (1, 2),
N. G. Tolmachev (1, 2), A. S. Adamenko (1, 2) and T. I. Mazilova (1, 2)

(1)   Kharkov Physicotechnical Institute, National Scientific Center, Kharkov, Ukraine; (2)
Laboratory of Electrodynamic Investigations, ENRAN Company, Kiev, Ukraine

Abstract --- A static breakdown induced by the impact of particles detached from a point anode
in a strong electric field, corresponding to the athermal field evaporation threshold, was studied by
field ion microscopy. Under these conditions, the particle size threshold for the vacuum discharge
initiation decreases by one order of magnitude as compared to the case of flat electrodes and falls
within a nanometer range of the average radius of bombarding charged particles. The threshold
energies of particles initiating a static electric discharge also exhibit a significant decrease.

V. Adamenko (1) and V. I. Vysotskii (2)

(1)   Electrodynamics Laboratory "Proton-21,", Kyiv, Ukraine
(2)   Shevchenko Kyiv National University, Faculty of Radiophysics, Kyiv, Ukraine

Abstract ---   We consider the peculiarities of the fundamental nuclear transformations running both
in the shell of a heavy star compressed by the strong gravitational field and during the laboratory
electron-nucleus collapse where the compression occurs at the expense of the electron-nucleus
interaction in a volume occupied by a degenerate electron gas, define their analogs, and analyze the
differences.

It is shown that the account of relativistic and nonlinear corrections to the Coulomb electron-nucleus
interaction gives the possibility to realize two alternative ways for the evolution of the star matter
which depend on both the rate of compression upon the gravitational collapse and the initial isotope
composition of a star on the stage preceding the collapse.

Upon the relatively slow compression of a heavy star in the process of gravitational collapse after
the attainment of the threshold electron density, there occur the stage-by-stage neutronization of
nuclei and the formation of a neutron star with a great concentration of neutrons and a low
concentration of protons and electrons. This process is characterized by the presence of a bounded
interval of the density of a relativistic degenerate gas of electrons ("the neutronization corridor"), in
the scope of which the neutronization runs with a decrease in the Fermi energy and the release of
energy in the form of fast neutrinos.

At a higher electron density, the process of protonization becomes energy-gained. In this case, an
increase in both the charge of nuclei and the concentration of degenerate electrons causes the
continuous increase in the binding energy of electrons and nuclei which turns out to be more
significant than the increase in the Fermi energy of electrons. The transition of nuclei through "the

neutronization corridor" into "the protonization zone", which ranges up to the nuclear density of a substance, is possible only in the case of a very fast compression of a heavy star. Such a process leads to the possibility of the formation of proton stars with a very small residual concentration of neutrons and a great (nuclear) concentration of protons and electrons.

It is shown that analogous effects can be realized during the laboratory electron-nucleus collapse. Due to a microscopic size of the collapse zone, a great velocity of its formation, and a relatively low rate of neutronization, the passage of the electron-nucleus substance through "the neutronization corridor" weakly affects its state. In this case, the main mechanism of transformations is the process of protonization with a simultaneous increase in the concentration of degenerate electrons.

Contact Information S. V. Adamenko
Email: edl@proton21.com.ua

___

Протон-21

(proton 21)

the New Fusion

STANISLAV ADAMENKO ON PROTON 21

The New Fusion
STANISLAV ADAMENKO ON PROTON 21

By Tim Ventura & Dr. Stanislav Adamenko, August 13th, 2006

By subjecting a copper electrode to a gigawatt pulse of energy, Dr. Stanislav Adamenko believes that he's found a new form of fusion that occurs inside a millimeter sized plasma that forms in the electrode. Has Adamenko finally cracked the code of solid-state fusion, and what potential for future energy does it hold? He joins us for the inside story on Proton 21's research into creating "The New Fusion"...

AAG: I'd like to start out by asking you about the background & history of the Proton 21 Electrodynamics Laboratory. How were you founded, and what inspired you to begin conducting fusion research?

Adamenko: It's difficult to write a concise history of Proton 21, because it begins, at least for me, as early as half a century ago. It all began with a number of insignificant events that at first appeared to be completely unrelated, but eventually became the inspiration for today's research. Without those synchronicities, I doubt that Proton 21 would exist today...

We're working on assembling a detailed history of Proton 21, which will appear in the introductory section of a book we're publishing about our research through one of the big European publishing houses. Since that project is really going to provide the most comprehensive view of our work, I'll just review some of the main stages of our research in our interview today.

At the end of 1958, when I was a very young man, I first became acquainted with the problem of controlled thermonuclear synthesis (CTS). This problem seized my imagination. I strongly wanted to believe in the existence of a simple and elegant solution, similar to the natural mechanisms in the synthesis of optimum structures. The search for a solution took many years.

By the end of 1979, as a result of my work on a dissertation devoted to analytical methods for the synthesis of multidimensional dynamical systems with optimum stability, I arrived at a realization that allowed me to see the conceptual unity of two
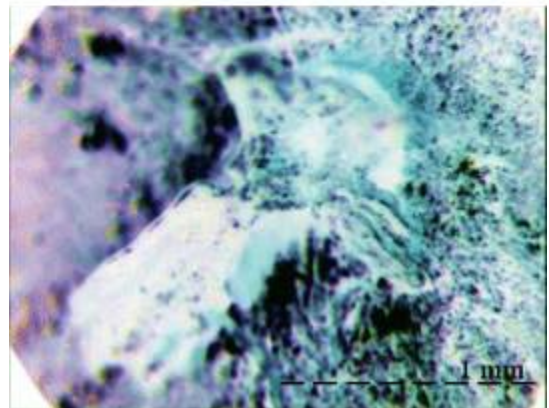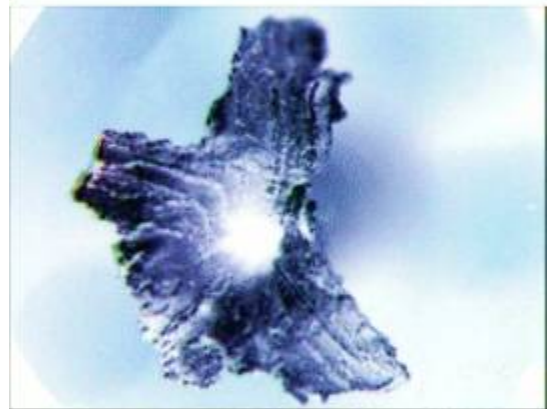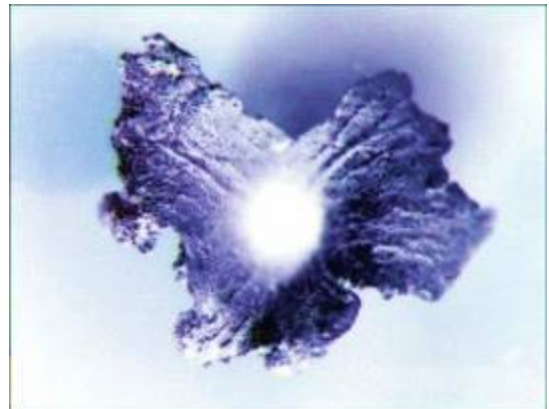
Target Samples: Color-enhanced views of several Proton-21 CTS target samples.

problems: the synthesis of an optimum dynamical system and the controlled nuclear synthesis. Both involve the formation of dynamical structures possessing optimum inertia relative to force acting from outside. We call this force "the general dominating perturbation" due to its role in forming systems.

It was obvious that the role of a general dominating perturbation, at least in the astrophysical processes of explosive nucleosynthesis we see in stars, is ideally played by the gravity of a collapsing cosmic body. I was hopeful that a process might exist that could be replicated under terrestrial conditions which could fulfill the role of a general dominating perturbation, and would thus be a catalyst for nuclear synthesis with the formation of a mass defect with that or another sign (i.e., with a change of the total inertia of the initial components).

During this same period of time, another group of scientists had formed an initiative group that was working towards establishing the "Kyiv Laboratory of Electrodynamic Studies", which later became Proton 21 as a private research laboratory. The Kyiv Labs team performed research in the following fields: nonequilibrium processes; thermodynamics of flows; pulse processes and nonlinear waves in plasma; focusing of dense hard-current electron beams, collective methods of acceleration; nuclear processes in biological systems; physical vacuum and elementary particles; two-body nuclear reactions; and other problems involved with nuclear synthesis as well as synthesis as a phenomenon in itself.

In 1996, as a result of several almost spontaneous meetings, a new initiative group was formed by experts from Kyiv and Kharkiv, who were interested in the problems of CTS and in new means of energy concentration. I served as both the organizer and the initial sponsor of this group until friend of mine took over this responsibility in 1997 - the director of a large Ukrainian building company. Unfortunately, it soon became clear that his other engagements simply overwhelmed his ability to fulfill this role.

In 1998, we appealed to another Ukrainian holding company with a proposal to invest in the first stage of the scientific-technical project named "Luch". We were lucky, and, in May 1999, the holding company established the "Laboratory of Electrodynamics Studies" under my guidance.
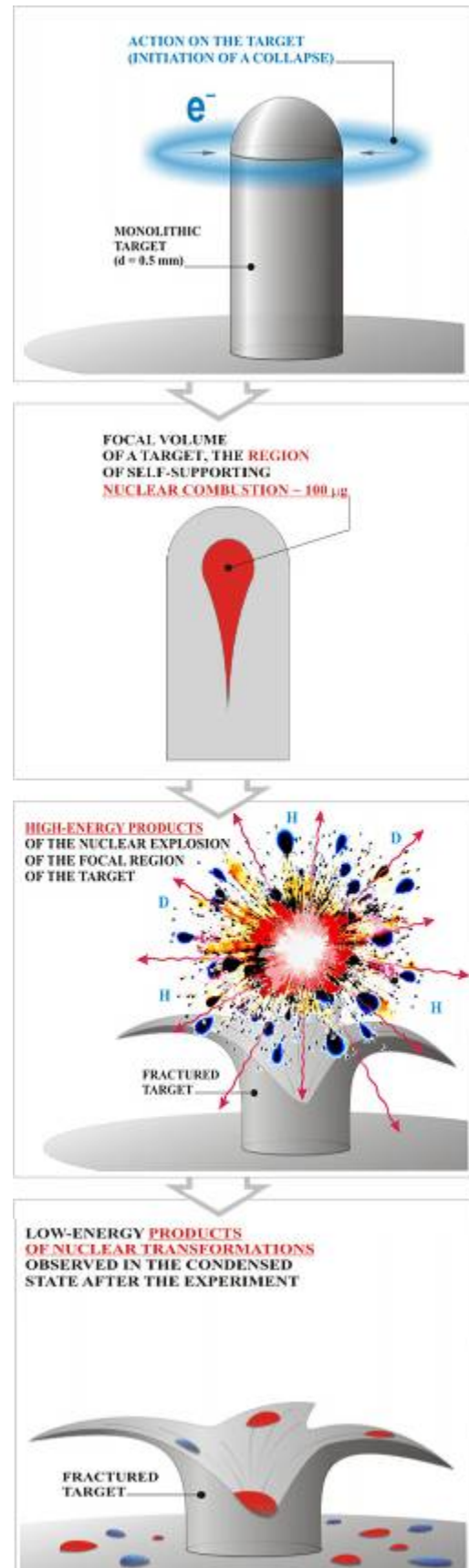
Solid-State Fusion: An overview of the Proton-21 CTS process in a solid target.

AAG: I've heard that Proton 21 was originally financed by a large Ukranian construction company, and that at one time it employed nearly 250 scientists in a former Soviet isotope-production facility in Kiev. Can you elaborate a bit on this interesting background for us a bit?

Adamenko: The information contained in your question is true on the whole, but I'd like to clarify things a bit:

First of all, the second sponsor of our project – the director of the large Ukrainian building company – is not the primary financier for Proton 21. His early support ceased in 1998 both organizationally and financially, and when he renewed participation with us in 2004, it was as a partner in a larger group of investors. Since 2001, the other members of this group have been the directors and owners of one of the large Ukrainian holdings, and have made the most essential financial contribution.

Also, our staff at Proton 21 never exceeded 100 people, but the total number of experts who we actively participated with certainly reached as many as 250 people. Those engagements came about for a variety of reasons, including personal motivation by people interested in learning about our research as well as others involved with making scientific measurements, studies, design, or producing equipment relating to the project.

The production center of the Proton 21 facility is located on the premise of a former Kyiv state enterprise dealing with the encapsulated sources of radioactive emission used in industry. The buildings & facilities of this enterprise were purchased by Proton 21 from the state, rebuilt, reconstructed, and equipped for solving the new problems during the transformation of the laboratory into an independent firm.

AAG: As I understand things, a lot of your research has involved pulsed plasma experiments in which a pure copper electrode literally explodes from the inside out during high-energy pulsed discharge experiments, which led you to hypothesize that a fusion reaction may have been occurring within the electrode. Can you describe this research a bit for us?

Adamenko: In May of 1999, we undertook a rather bold commitment over the course of 9-months
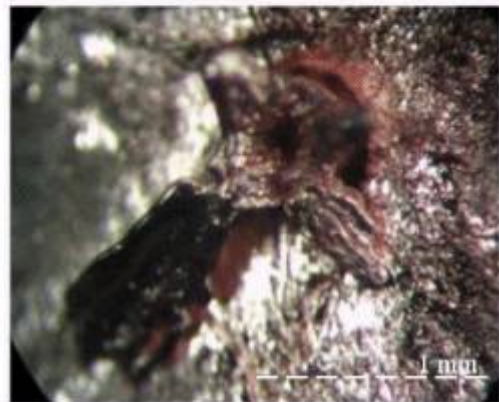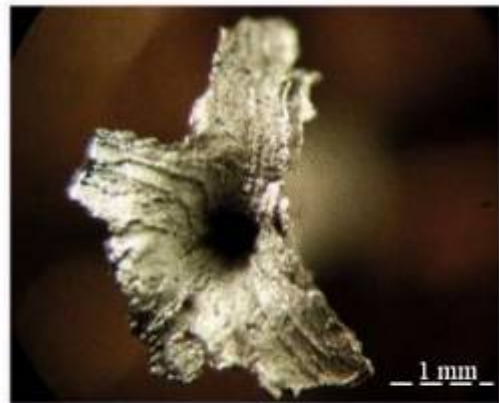
Target Samples: This closeup shows target samples exploded from the inside.

to construct an electron accelerator to use as in a driver of CTS. Our goal was to assemble a system to exceed the Lawson criterion in a metallic target at the expense of the compression and the confinement of the plasma on a target by the magnetic field of a self-focusing electron beam.

We spent 3 months trying unsuccessfully to make our confined plasma fusion scheme successful, and in the process, I came to understand that the initial concept for implementing the force driver is unrealistic and unproductive. It was a critical moment in time for us. Suddenly, I had an epiphany -- that we could use the same beam, but this time as a material carrier of the mentioned mass force, i.e. as the general dominating perturbation initiating a collapsing soliton-like wave-shell of the particle density in the surface layer of a target. This will yield the formation of a cumulative cascade of self-organizing nonlinear physical processes inevitably leading to the collapse of the wave, whose termination will be associated with the limiting concentration of substance and energy at the target center, to be more exact – at its microscopic focal volume.

The day that we undertook our first attempt to generate shock compression in the target material was one of the most delightful days of my life. Our experiments were immediately successful. Less than a year after beginning the experimental stage of project "Luch," we registered the occurrence of an event which can be undoubtedly considered as a pivotal moment in the history of Proton 21.
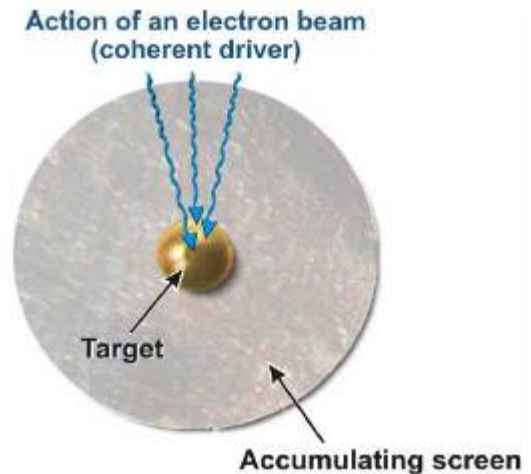
On February 24, 2000, at 6.05 p.m., a micro-supernova with a mass of 1 mg flashed and shone for 300 ns (30 ns in the X-ray range). The target – a metallic cylinder of 0.5 mm in diameter – exploded from inside. Its remnants had the characteristic form of a conical crater with lobes passing into a deep channel along the axis, which indicated that we had attained maximum energy density and focused it correctly along the axis of the target.

The splashes of low-energy products of the explosions of targets are well seen on the lobes of the fractured targets and on the accumulating screens near their bases:

Initiating Driver: A cascade-effect occurs during the shock-discharge CTS process.

The subsequent X-ray measurements demonstrated that the focal region within the target is shaped like a teardrop with a diameter of less than 10^{-2} cm (in the case where we used targets of about $5 \cdot 10^{-2}$ cm in diameter), and with a length that spanning more than two target outer diameters. We found that the effective temperature of the substance at the focal point is equal to 35 keV on average, which corresponds to ~$3.5 \cdot 10^8$ K. We believe it's more than just coincidence that this is the same characteristic temperature as the thermonuclear processes that occur inside white dwarf stars.

For several days after the first successful experiment, we succeeded to get 100% repetition rate for the axial explosion in targets manufactured from a variety of different materials.

Over the course of several months, we determined that up to 20% of the mass in the target sample underwent nuclear transmutation into a variety of elements not found in the original sample. We used X-ray spectrum microanalysis and mass-spectrometric studies to determine this. Surprisingly, the products of these explosive reactions did not exceed the background values for radiation. This went against our initial expectations, because our concept of self-organizing synthesis of nuclear structures created by a coherent shock action does not assume
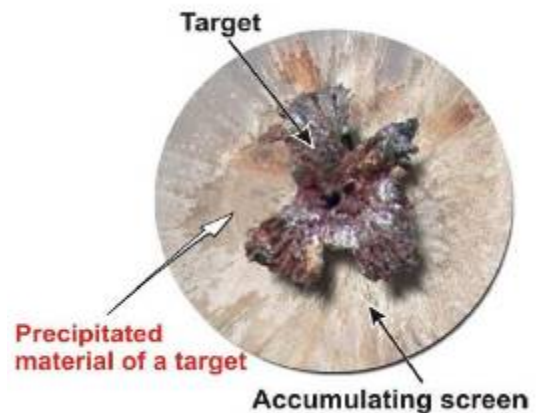
the production of unstable atomic nuclei. After several hundred analytical studies of measuring the post-experimental composition of our target samples, it became clear that the statistical mean curve of the abundance of chemical elements created in our experiments are close to those characteristic in the Earth's crust. The main difference is that the concentration of heavy elements was somewhat higher in our targets, most noticeably in the element lead (Pb). In view of the enhanced stability of the double-magic nucleus 208Pb, we were not surprised by this fact.

We also unexpectedly observed that the value of the ratio of the integral mass defect for identifiable products of the nuclear transformation (from 150 kJ to 10 MJ in energy units) to the kinetic energy of products of the explosion of a target from 500 J to 10 kJ depending on the conditions of a specific experiment at the invariable supplied energy of about 300 J.

To really understand the significance between these experimental values, it's important to remember the incredible energetic potential observed during our experiments. While it may seem improbable, the main distinctive feature we observed is nothing short of a new natural mechanism for nuclear combustion. However, please bear in mind that our work is far from complete, and won't be finished for years to come…

AAG: Now the electrodes that you were using in these experiments were 99.999% pure copper, but post-experiment analysis indicated the presence of isotopic impurities in abnormal ratios that support the notion that you were producing actual fusion. Can you comment on the elements being created during these high-energy pulsed discharge experiments?

Measuring: Nuclear products accumulate from the target on a 99.98% copper screen.

Adamenko: Just to be clear about things, the copper electrodes we used were around 99.95 to 99.99% pure. Now generally speaking, the concentration of the basic chemical element in various experimental targets is, as a rule, at least 99.92%.

Anyhow, in terms of estimating the influence of admixtures in chemically pure targets on the composition of products of the nuclear transformation of their substances, the other circumstance is of importance. Namely, we have established the absence of any significant correlation between the concentrations of admixtures in a target and the observed abundance of the chemical elements identified as products of the nuclear transformation. This is not striking, because the total mass of admixtures in 1-3 mg of a substance, for example, of a Cu target undergoing the high-energy action does not exceed $6 \cdot 10^{17}$ a.m.u., whereas the total mass of, for example, only atoms of Fe or Pb which are always observed in the explosion products is at least of 1019 a.m.u., and the summary mass of all identifiable products of the nuclear transformation which are referred to the known part of the Periodic table is more than 1020 a.m.u. in some experiments!

In this case, our data indicates that the enhancement of the chemical purity of the substance of targets under consideration leads to the enrichment of the composition of chemical elements in products of a micronuclear explosion rather than to the impoverishment. It is also characteristic that, irrespective of the element composition of targets, the dominant positions in the relative abundance of the atoms in products of the artificial nucleosynthesis are permanently occupied by C, O, Na, Al, Si, P, S, Cl, Ca, Ti, Fe, Cu, Zn, Ag, Sn, Ba, La, Ce, W, Ta, Pb.
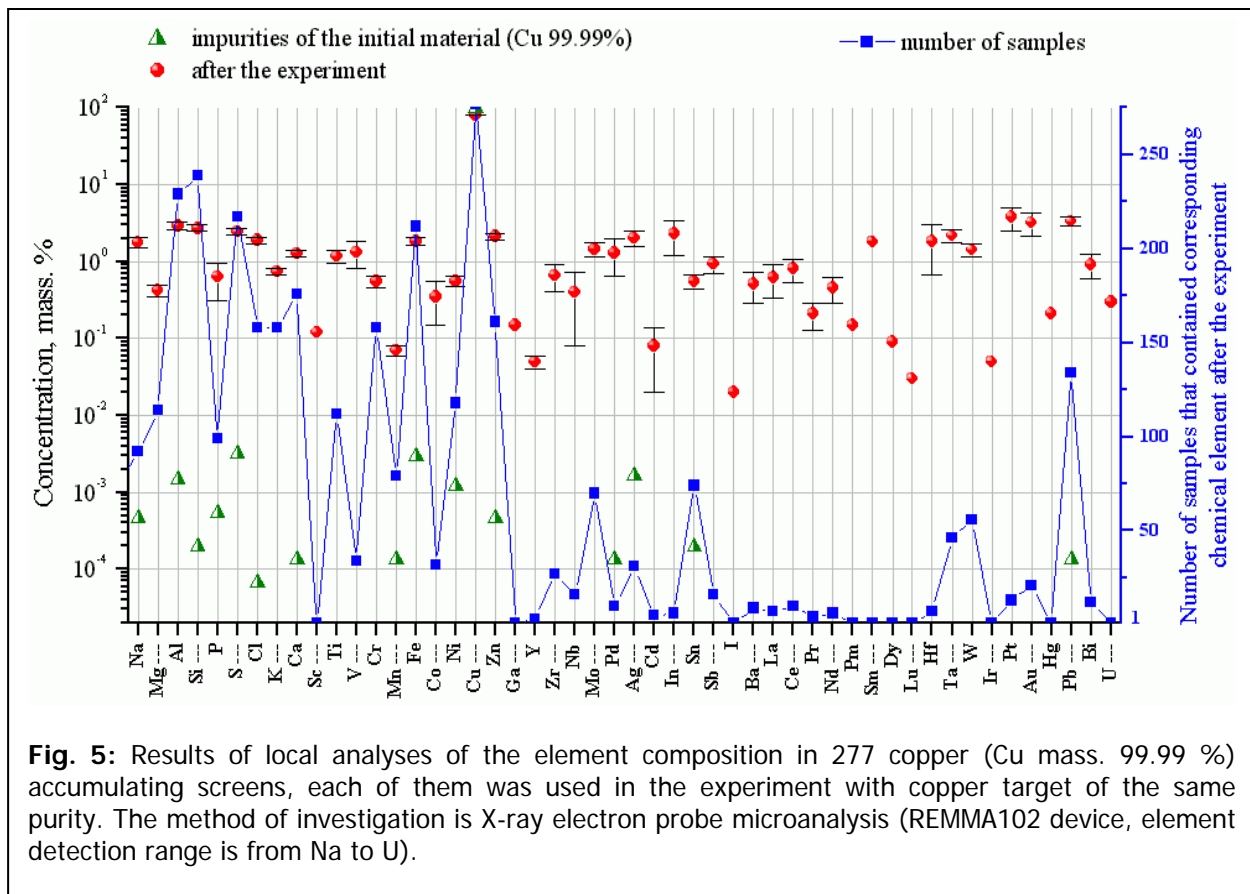
Fig. 5: Results of local analyses of the element composition in 277 copper (Cu mass. 99.99 %) accumulating screens, each of them was used in the experiment with copper target of the same purity. The method of investigation is X-ray electron probe microanalysis (REMMA102 device, element detection range is from Na to U).

AAG: Given the anomalous production of elements in your pulsed-energy discharge experiments, would you say that there is a possibility that stellar processes don't create matter through the "traditional standard model" and the "carbon cycle", but some sort of process similar to your "self consistent collapse" which generates net energy by creation of Super Heavy Nuclei, antimatter and conversion of matter to energy by "spontaneous" fission of super-heavy nuclei elements?

Adamenko: We've a collected samples and test-measurements from tens of thousands of successful laboratory experiments, and performed over 30 thousand measurements using a variety of different methods to accurately determine the element and isotope compositions of the products of the target explosions. However, we've never had the type of large-scale laboratory facilities required to perform a statistically significant series of comparative studies and measurements, including astrophysical ones, so it's impossible to say with certainty.

Nevertheless, I'm cautiously optimistic that the experimental data we're seeing in the laboratory is indicative of similar processes that create matter in observed cosmic phenomena. For example, the coefficient of correlation between the emission spectra of the exploded targets in our labs to those of supernovas, quasars, pulsars, and gamma-bursts in the energy range from 10 keV to 10 MeV is upwards of 0.92 to 0.99.

Now in the case of stars with longer lifecycles, like our sun, it's commonly known that their composition is the result of classical nuclear reactions as described by the traditional standard model. At the same time, it's also possible that solar fusion also includes a process that might be described as the "induced decay of superheavy nuclei".

In the induced-decay process, the resulting fragmentary decay products of these superheavy nuclei are the nuclei of stable isotopes such as He, C, O, Ne, Mg, Si, S, Ca, Fe. These isotopes have a high internal stability in the nucleus, and hence the maximum probability to survive as semi-discrete local structures within the much larger nucleonic conglomerate structure of a superheavy nuclei. For superheavy nuclei with mass numbers approximately 10^3 to 10^6 a.m.u, at least two decay scenarios are possible:

First, for superheavy nuclei near the lower boundary of the indicated range and the minimum specific binding energies per nucleon, decay is possible due to the internal excitation induced by a low-energy external action.

Second, for larger nuclei (up to 10^6 a.m.u) with higher than normal per-nucleon binding energies, a constant growth & decay process may be at work in the solar environment. This would result from a growth period characterized by the absorption of lighter nuclei from the surrounding environment into superheavy compound nucleus, followed by a period of decay in which new light nuclei literally "boil" out of the compound nucleus in a manner similar to cluster radioactivity.

This form of "evaporative self-cooling" of the compound nucleus is characterized by a partial loss of mass as each cluster boils away that's not equivalent to the initial mass gained as light nuclei are absorbed. In a sense, this growth and decay phase involves the addition and subtraction of particles in a "two steps forward, one step back" process, which functions as a repetitive cycle within the nuclear environment until a potential well is reached with the attainment of the minimum of the specific energy of a nucleus per nucleon.

The specific binding energy per nucleon can range from 2 to 5 MeV for smaller superheavy nuclei up to 35 to 40 MeV for larger nuclei, with an efficiency from 3 to 6 MeV/nucleon in the first scenario above to 20 to 30 MeV/nucleon in the second, as predicted by academician A. Migdal. This gives us some exciting new possibilities for producing nuclear power where the net yield of usable energy can be 3 to 6 times higher than in the most efficient classical thermonuclear reactions.
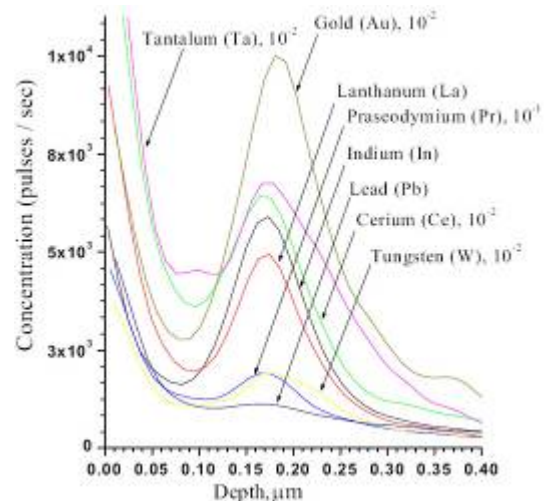
Synthesis: A distribution of new elements in a target sample after explosive testing.

AAG: Let's talk about the energy side of your fusion research -- recently, the Sandia "Z machine" which is a wire Z pinch made a materials change from Zirconium wires to Steel wires. They observed (through X-ray emissions) a change in the plasma "temperature" from 2 million to 3.6 billion degrees Kelvin. They also observed indications of a net energy "output" from their plasma which was more than the calculated input to the plasma itself. Do you think they are seeing the same "self consistent collapse" that you see with your experiments?

Adamenko: Unfortunately, I don't know enough about the details of the Sandia Labs Z machine – at least in terms of driving an artificially initiated nuclear collapse. However, speaking very generally, I can say that I don't presently see any other way to initiate the exoergic nuclear reactions in macroscopic portions of the terrestrial materials other than through the driver-initiated nuclear collapse that I've described.

The conditions required to generate these reactions in our own lab involve the excitation of a collapsing wave-shell in neutral plasma, where the density and energy of the particles forming this plasma correspond to a particular extreme state that favors the bulk-generation of coherent nuclear reactions.

Thus, if the researchers over at Sandia used ordinary metals as a nuclear fuel and observed the positive energy yield, we can explain their results only by assuming that they have inadvertently recreated a process that we first publicly described at a conference in Messina, Italy, in October of 2002.
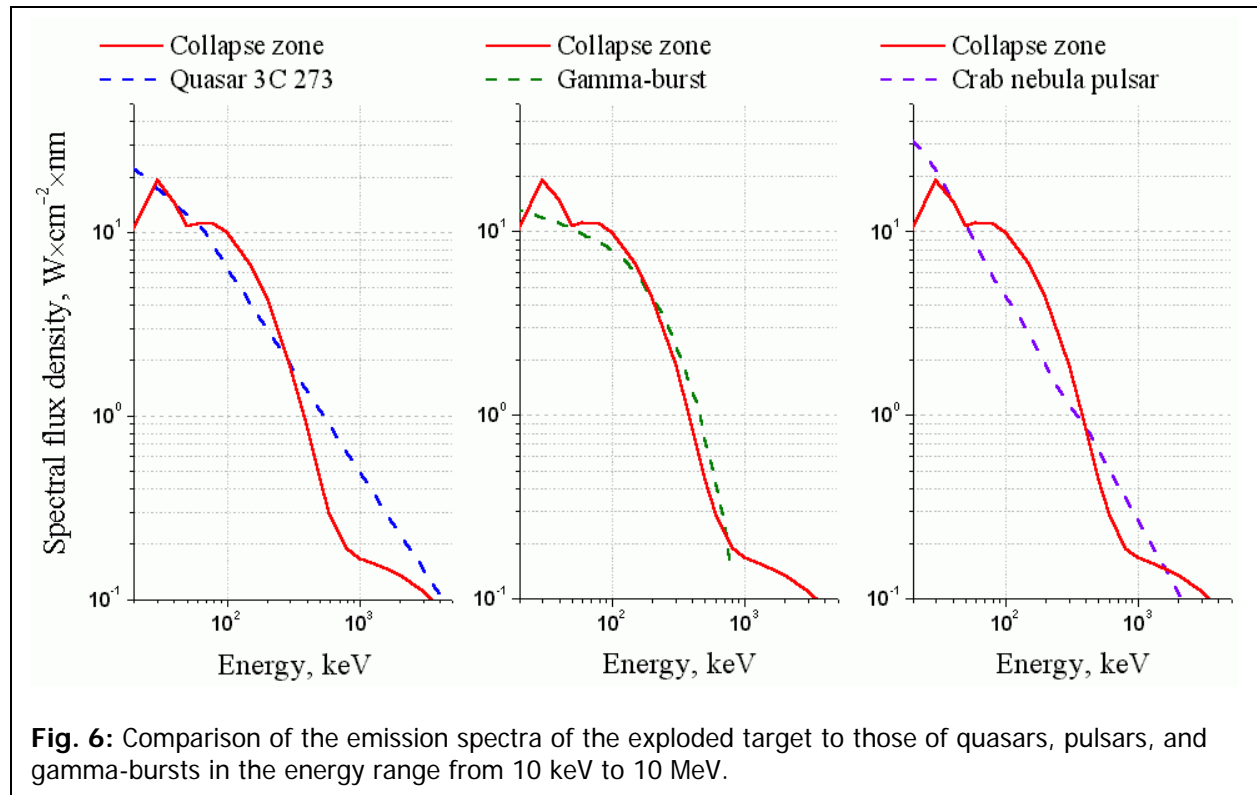
Fig. 6: Comparison of the emission spectra of the exploded target to those of quasars, pulsars, and gamma-bursts in the energy range from 10 keV to 10 MeV.

AAG: I understand the Sandia researchers are not doing analysis of the residuals from the Z machine pulses- they're only measuring the radiation produced during their experiments. Would you say that they may be missing something in not doing Auger/Xref (X ray emmission spectroscopy) and mass spectrometer work on the residuals from each pulse?

Adamenko: The type of analysis conducted at Sandia is naturally defined by what their research staff expected from the experiment and by their purposes.

In our experiments, beginning in February of 2000, we've purposefully initiated bursts of quasi-Supernovas. So in our case the analysis of the elemental composition of products of the target explosions were quite natural and planned.

I think it's important to repeat that if Sandia registered a yield of excess energy and don't ascribe this to zero-point, torsion fields, or other hypothetical, but noncanonized energy sources, there remains one process that does offer an explanation – the mass defect or the binding energy (either nuclear or chemical). If the possible chemical reactions cannot explain the observed yield, then it is necessary to search for the products of nucleosynthesis revealing the mass defect and a corresponding amount of the free energy.

AAG: What directions would you propose going in the future? How do you break the paradigm "block" which doesn't allow people to even attempt to do analysis which may verify your results at another institution with a pulsed power device which may be obtaining the same results you have?

Adamenko: The high-energy pulse apparatus isn't enough by itself to reproduce the experiments we're conducting at Proton 21 – to generate the required shock compression it's necessary to thoroughly reproduce the experimental setup described in our patent. Also, you have to carefully tune the apparatus in order to create the necessary conditions to generate the chain of self-organizing physical processes in the target and surrounding substrate. Without this you won't get a successful response from the initiating action of a beam driver.

It's a complex process, but we're open to participating with other organizations in an open, forthright manner in order to assist them with replicating these experiments. It's a collaborative strategy that will save everyone a lot of time and effort, and ultimately lead to the advancement of science and humanity. This approach to open, collaborative research is by far the best way to break out of the old paradigm and usher in a new era of understanding, and it's going to be something that we're going to direct a great deal of effort to over the next couple of years.

Explosive Inversion: Target samples are literally turned inside out from the explosion.

AAG: Does the research that you've performed offer any hope for Low-Energy Nuclear Reaction (LENR) technologies, such as Cold-Fusion, Bubble-Fusion, or anything along those lines?

Adamenko: I think that it is the central question of this interview, and the answer is unequivocally YES!!!

I believe that our theoretical studies and experimental research not only give the hope to the LENR-trend, but also significantly clarify the physical mechanisms underlying the LENR process. Thus, our work should allow researchers in the LENR field to understand the mechanism of these nuclear processes in order to optimize them for eventual use in commercial energy generation.

I believe that the collective and coherent effects of nuclear interactions in dense substances like the kind we use allow us to precisely describe the mechanisms inherent in LENR reactions, and also to finally explain the great number of accidental LENR experiments, in which various products or effects of nuclear reactions were revealed in a very unexpected manner. These include neutrons, newly synthesized chemical elements, changes in the distribution of natural concentrations of stable isotopes, and the emission of light, heat, and other previously unexplained phenomenon.

Some of the more traditional LENR experiments have an explicit relationship to our artificially initiated collapse. For example, let's assume for a second that the self-collapse of an artificially formed macroscopic bubble is possible. In this experiment, we're faced with the self-collapse of a disorganized and highly-inefficient collection of microscopic gas-bubbles where each event

generates less than a trillionth of the total effect. Unless the collapse occurs in a coherent manner, the overall effect is negligible compared to its true potential. Coherency creates a cascade-effect in nuclear reactions that means nothing less than the difference between a pile of uranium and the atomic-bomb.

Simply put, we're dealing with physical processes that exhibit a strongly nonlinear dependence. A good example to consider is the amount of the excess energy released in an LENR reaction versus the amount of the active substance involved in the experiment– this is something that we've examined extensively in our own experimental research.

This nonlinear dependence explains why the majority of well-known LENR experiments demonstrate such extremely small yields in terms of energy production & nucleosynthesis, as well as why the results are so difficult to replicate or even accurately identify when they occur.

I'm sure that in the next five to ten years, collective & coherent nuclear reactions will become the focus of major investment in the field of nuclear-energy research, and it will lead to the beginning of a large-scale transition to a new, environmentally-friendly means of producing energy based on collective natural nuclear transformations.

The technical publication that we're currently working on will contain a much greater depth of detail than I've been able to provide here on how our work applies to emerging concepts in energy. It will be a collective monograph of the leading experts in our research group, and as I mentioned earlier, it should be available in the near future.
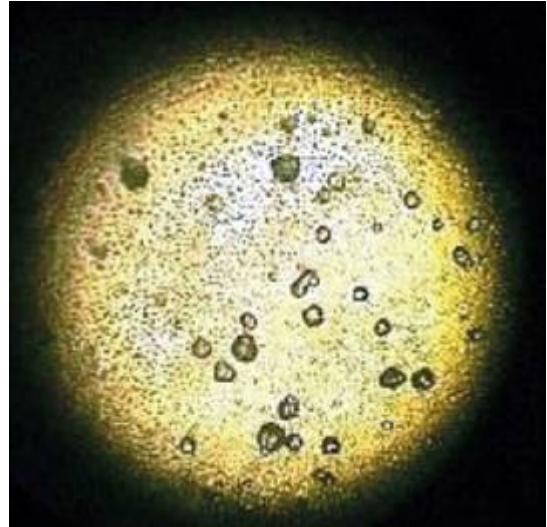
Fast-Ions: The detection of fast-ions in the detector after the destruction of the target.

AAG: Mysterious "black spots" were found on the copper electrodes during analysis with both optical & SEM electron-beam microscopes that appear to have some very unusual properties. Can you elaborate on this for us?

Adamenko: Carl Sagan once said, "Incredible claims require incredible evidence", so I've emailed you a bit of video that we shot of this anomaly. We captured this footage from the monitor of a "CAMECA IMS 4f" ionic microprobe in 2003. Unfortunately, while this anomaly was very interesting, we only conducted this particular series of experiments for a short period of time due to funding limitations. As a result, we were unable to document a sufficient number of events to draw any statistically reliable conclusions about the anomaly. Nevertheless, it's important not to discount the importance of this anomaly, regardless of the frequency with which it occurs.

The situation was as follows:

We were studying the nuclear transformation products of exploded metal targets by secondary-ion mass-spectrometry using the "CAMECA IMS 4f". We discovered a number of "spots" on the surface of several 99.98% pure copper accumulating screens, in which no scope signals from secondary ions were recorded. Secondary ions are normally dislodged from the screen's surface, and should have been present given the intense bombardment of the screen by primary ions. These spots were areas with a transverse size of about 50 to 100 μm that looked like irregularly-shaped black spots on the display.

So basically, the crux of our observation was the absence of a secondary ion flux in the scope for the entire range of ion masses analyzed by the device in the area of the black spots.

In following the normal procedures for interpreting the images of the ion microprobe, we can only conclude that in the case of these anomalous black spots, not only are they not composed of any of the known chemical elements, but they're also not composed of any type of previously undiscovered heavier element – in the case of our equipment, up to 480 a.m.u. which is the boundary of the range of IMS 4f.

Our operators have been making observations of this kind for decades, and this was the first time they'd encountered this type of anomaly. If it wasn't any type of known atom, then what could it possibly be? We obsessively searched all of the specialty literature for an answer, but didn't find any description of a similar phenomenon ever being documented before these events.

After 19 sec

After 4 sec

Atomic mass: **63**

Atomic mass: **433**

Fig. 7: The "black spot". Secondary ion images. Investigation method is the secondary ion mass spectrometry (IMS-4f device, analyzed mass range is up to 500).
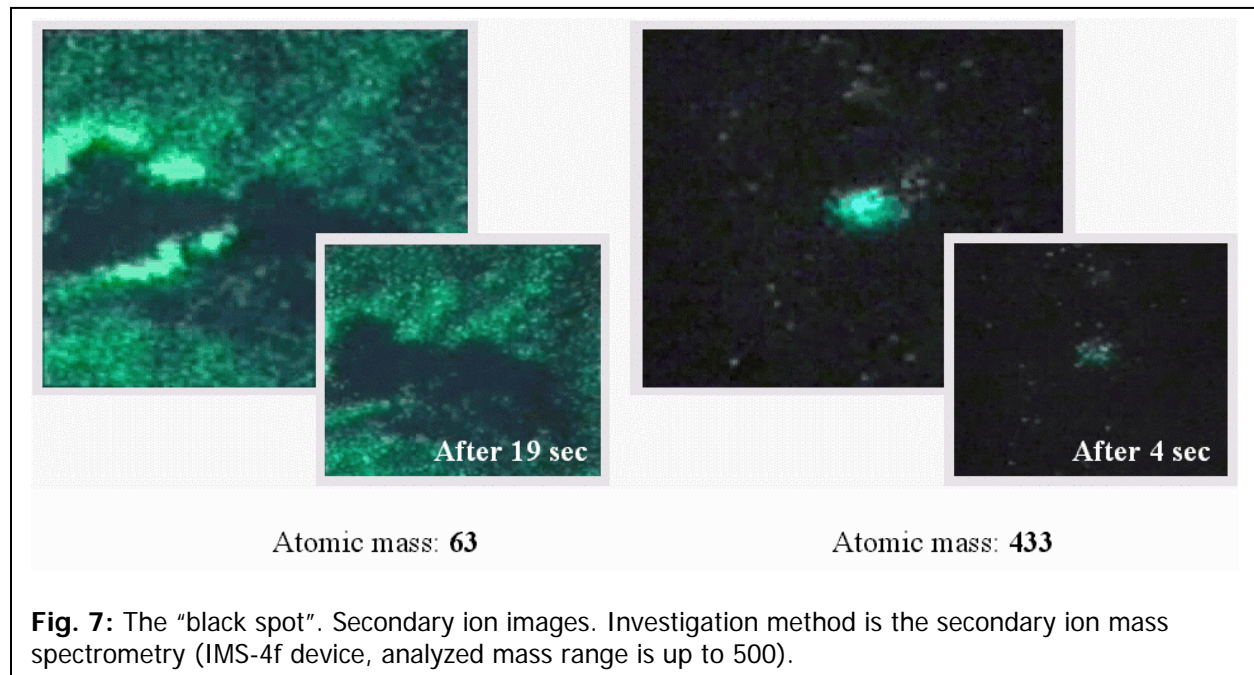
We noticed something else, also – even stranger than the lack of secondary ions. We were subjecting the black spots to a heavy ion bombardment in an attempt to pick up a secondary signal when we realized that not only were we not seeing a secondary signal, but there was also a complete absence of a signal from the primary ions in the beam of a microprobe! The ions that we bombarded the spot with simply seem to have disappeared, quite literally without a trace.

At first I refused to believe that this could even be possible, because the primary ions are reflected (scattered) from any surface in such a great amount that the secondary image of these ions on the display is transformed always into a continuous glow on the scope's viewing-screen. This omnipresent background signal is the reason that the scope's display is automatically switched-off after a period of time – to prevent screenburn from the primary ions. As improbable as it may sound, the absence of reflected primary ions from the surface of the black spot must indicate that the primary ions arriving at the spot surface were captured by it!

In another attempt to get a signal from the spot surface, the operator gradually scanned the whole dynamic range of masses of secondary ions accessible to the device. This was performed a while after the primary beam was switched-off. While slowly turning the tuning knob of the
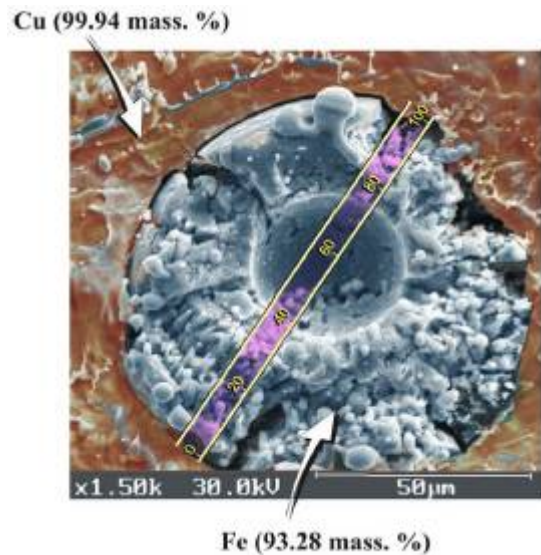
device, the operator noticed a flickering spot with decreasing intensity near 433 a.m.u. This flicker was positioned inside the black spot and occupied a small part of its area, and several seconds after the beginning of the observation, the brightness of the flickering spot decreased to zero (i.e. the luminous spot against the background of the black area disappeared).

We repeated this new experiment by switching the beam on again for several minutes and again switching it back off. The image of a flickering spot at a mass of 433 a.m.u. arose with the same initial brightness and again disappeared from view within several seconds. In both cases, the boundaries of the black spot were invariable.

After repeating this power-cycling & observation routine 12 times, we established that the initial luminous intensity of the 433 a.m.u. spot after a pause was proportional to the duration of the pause, and the decrease in luminosity intensity as it faded from view had an exponential character.

During the analysis of another black spot with the use of the ionic microprobe, the operator observed a pattern similar to that described above, but different in that the luminosity arose not inside the black spot, but instead occurred in a non-uniform manner along the length of the black spot's winding boundary.

Cu (99.94 mass. %)

Fe (93.28 mass. %)

Transmutation: An iron mass embedded in a 99.98% pure copper target sample.

We've only found one suitable explanation for these unusual effects. Consider for a moment the focal region of a collapse, where the density of the substance in a collapsing shell reaches extreme values approaching those characteristic of the conditions in a collapsing star. At the moment of transition from implosion to explosion in the collapsing shell, a strongly ionized substance is ejected consisting of superheavy nuclei in which the specific binding energies per nucleon are far below their maximum values.

Academician A. Migdal showed that the Coulomb barrier for such nuclei can be almost completely suppressed by a so-called "nuclear condensate" of negatively charged mesons which are formed in the nuclei in sufficient numbers to balance out the Coulomb field of nuclear protons.

I believe that these nuclei can exoergically capture the nuclei of the normal atoms that surround them when those atoms reach a certain resonant temperature range. After that, the decay cycle for these new superheavy nuclei will occur using the normal induced-decay mechanisms that I've described previously. The multiple repetition of this "absorption-boiling-evaporation" cycle leads to a growth in both the mass of the superheavy nucleus and its specific binding energy up to maximum values exceeding 105 a.m.u. and 35 MeV against the background of the nuclear transformation of the surrounding substance in the opposite direction.

The accumulation rate of products boiling off the growing superheavy nuclei will be proportional to the surface area of the superheavy substance in contact with surrounding environment, and inversely proportional to the difference in temperature of this environment from its optimum value to overcome the Coulomb barrier and hence contribute nuclei from nearby atoms to the growing nuclei.

Additionally, the position where this flux intensity is visible in the microprobe's display-screen is determined by the ratio between the creation of nuclei-fragments and the dispersion of atoms on their base by the primary beam, whose intensity and the duration determine the actual temperature of the medium (and the creation efficiency) and the dispersion rate of the created substance on the base of nuclei-fragments.

This is our explanation for the pattern of intensely luminous localized fragments of the surface against the background of the black spot. Also, depending on the output rate for products of the nuclear boiling-process, the pattern observed outside can look like either a nuclear glow or a nuclear nanoexplosion.

AAG: Extrapolating from the properties of this spot on a microscopic scale, if it were enlarged into a 10 cm diameter sphere, would it stand to reason that it would absorb matter with no reaction in the same way that the microscopic sphere absorbed billions of oxygen-atoms from the SEM microscope/ion-beam probe?

Adamenko: It's difficult to answer this question without first mentioning that the observed black spots can include from 10^{15} to 10^{16} nucleons. In order to form a spot with an area of about 100 cm^2, we need that their number be 10^7 times more – from 10^{22} to 10^{23} nucleons or from 17 to 170 mg.

In our current experiments, the total mass of the nuclear products produced by each pulse is less by three orders of magnitude. Therefore, it would be pointless to discuss the production of film coatings made from some type of superheavy material.

Explosion: A clean explosion of a target sample from internal plasma pressure.

On the other hand, I should point out that the absorption of ions from the primary beam doesn't exactly occur without any traces, but rather has certain consequences in the form of a nuclear boiling process as the byproduct of a growing superheavy nuclei.

AAG: As I understand things, in terms of creating useable energy from your copper-electrode experiments, haven't you written in the past that the major challenge to commercializing the technology remains the setup time involved with producing each energy-producing pulse? Don't these take nearly an hour to setup for each, despite the fact that they produce 10 times higher output than input?

Adamenko: The technical parameters required for the commercialization of our nuclear combustion technology really depend on the application you have in mind, such as the synthesis of superheavy nuclei, the neutralization of radioactive waste, or the production of energy.

In the last case, in addition to the technical challenges involved you described with the repetition of pulses, it's also necessary to optimize several parameters relating to the initiating beam and the micro-targets to be used as fuel. However, the theoretical models of artificially initiated self-sustaining collapse that we've developed over the last five years were developed with this application in mind, so it's not an impossible task.

In the next year or so, we'll be in a position to allow computer-optimization to begin providing us with initial data to construct a prototype setup that we expect will yield significant positive energy.

As for the 10-fold excess of released energy over input, in order to understand the complex problem of utilizing the energy produced by artificially initiated collapse, consider that 2.5 kJ of excess energy can be carried away from the collapse region by protons at 10^{15} eV, in numbers less than 10^6.

At present, the minimum time required for the preparation of a pulse is about 20 minutes. This is mostly determined by the capacity of vacuum pumps we're using, the time it takes to change the target, and charge time for our capacitors. However, it shouldn't be difficult to modify our apparatus to deliver a pulse every few seconds, if desired – the modifications would be almost trivial. Now if you wanted to increase the pulses to tens or hundreds of hertz, then it would involve some major technical challenges – but even in that case, these are not insurmountable.
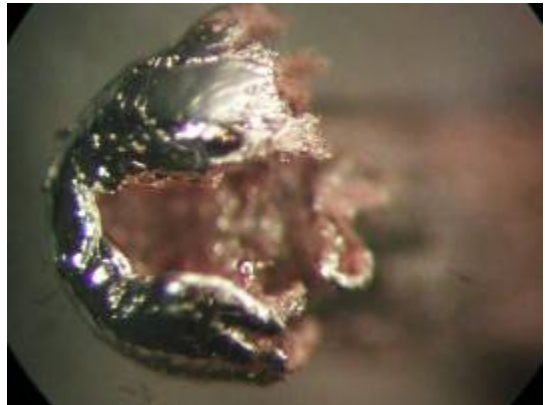
Closeup: An extreme closeup on a 2mm copper target sample after an experiment.

Vacuum Electric Discharge Initiated by Accelerated Nanoparticles

S. V. Adamenko, P. A. Bereznyak, I. M. Mikhaĭlovskiĭ, V. A. Stratienko,
N. G. Tolmachev, A. S. Adamenko, and T. I. Mazilova

Kharkov Physicotechnical Institute, National Scientific Center, Kharkov, Ukraine
Laboratory of Electrodynamic Investigations, ENRAN Company, Kiev, Ukraine
Received March 6, 2001

Abstract—A static breakdown induced by the impact of particles detached from a point anode in a strong electric field, corresponding to the athermal field evaporation threshold, was studied by field ion microscopy. Under these conditions, the particle size threshold for the vacuum discharge initiation decreases by one order of magnitude as compared to the case of flat electrodes and falls within a nanometer range of the average radius of bombarding charged particles. The threshold energies of particles initiating a static electric discharge also exhibit a significant decrease. © *2001 MAIK "Nauka/Interperiodica".*

Investigations of the high-voltage vacuum discharges clearly demonstrated the determining role of the explosive emission centers formed in a pulsed discharge process [1–3]. Ectons, representing charged particle bunches, were originally also observed in the study of explosive (blow-up) emission processes. However, further investigations showed that ectons may also appear as a result of the microexplosion processes occurring on electrodes bombarded by accelerated microparticles [4]. An allowance for these effects made it possible to explain the main features of a static high-voltage vacuum discharge initiated by the impact of microparticles on the electrodes. However, the laws of such discharge initiation strongly depend on the particular experimental conditions, and the mechanism of this phenomenon is still not completely clear. The phenomena accompanying the static vacuum breakdown for electrodes bombarded with particles of micron and millimeter dimensions were more exhaustively studied [4, 5]. The breakdown initiated by the bombardment of smaller particles remains practically unstudied, which is explained to a considerable extent by difficulties encountered in the determination of the microparticle configurations and energies.

We have studied the static vacuum breakdown initiated by submicron particles using high-resolution field ion microscopy (FIM). This technique is capable of determining the size of particles and the local electric field strength. As a result, it was established that the particle size threshold for the initiation of a static vacuum breakdown in a strong electric field falls within a nanometer range of the radius of bombarding particles. Accordingly, the particle energy threshold for the discharge initiation is also shifted toward lower values.

The experiments were conducted in a two-chamber field ion microscope operating at a working voltage in the 2–30 kV range, using samples cooled with liquid hydrogen. The amplitude of relative voltage pulsations did not exceed 10^{-3}. The residual gas pressure in the inner working chamber was 10^{-6} Pa; the imaging gases were helium, neon, or hydrogen at a pressure varying from 10^{-1} to 10^{-3} Pa. The sources of charged microparticles were cone-shaped point tungsten anodes (99.98% W) with an apex angle of $10°–15°$ and a point tip curvature radius of 5–40 nm. The particles were produced by the fracture of the point tip under the action of ponderomotive forces of the applied electric field. The cathode had the form of a copper disk with a central hole and a surface polished by mechanical and electrochemical (orthophosphoric acid solution) methods. Ions passing through the hole (occurring on the optical axis of the microscope) formed an image of the point surface, which was amplified by a microchannel plate. A high voltage was applied to the point anode through a $2 \times 10^8 \, \Omega$ resistor. The capacitance of the diode in which the electric breakdown was initiated was 200 pF. The electric discharge was detected by a jump of the voltage across the diode and by a flash of light. In order to eliminate vacuum discharges initiated by the field electron emission and evaporation of the anode, the diode was subjected to high-voltage training. The experiments on the breakdown initiated by accelerated microparticles were started upon reaching a vacuum insulation strength of not less than 25 kV. After the high-voltage training, a series of 20–30 experiments was conducted without breaking vacuum in the working chamber. The point anodes that degraded during the experiments were replaced with the aid of a high-vacuum-lock preparation chamber.

Radiant Energy Diatribe

****THIS DISCUSSION WAS GENERATED BETWEEN PAUL CLINT and BRUCE PERREAULT in a series of e-mails
between 01/29/2001 and 02/03/2001***

Bruce A. Perreault   February 2nd, 2003 (revised 10/22/04)

e-mails were edited for clarity

Cable Generator Discussion

Static Electricity that is generated on a properly treated insulated wire will produce more than a kilowatt in a light
wind, according to *Paul Clint*. This becomes possible because of a phenomenon in physics known as the
electret effect. This effect occurs when the surface between a conductor and a dielectric obtains a permanent
electric field. This field has the same effect on static electricity that a magnetic field has on iron filings.

A treated piece of insulated wire strung out in the wind will act as a Van de Graaf high voltage generator. In
some conditions, a 400-foot length of wire can generate 50 kilowatts and even on a bright sunny day with a
breeze of 3-4 mph, it will average 10 kilowatts, *according to Paul Clint's calculations.*

How can the static energy produced by the cable be converted into a usable form?

The only practical method I have found in the past was to charge a battery. My *ionic diode* component might be
another way to do the conversion. I will run some tests when I get the time..

The static electricity generated can be used to charge a battery using nothing but a spark plug, a coil and a
capacitor, but the process is only 15-20% efficient using conventional diodes. An efficient voltage controller must
be used to keep your battery from overcharging. The circuit is needed to convert static charge into low voltage
to charge batteries. The least expensive design uses a spark plug, an old automotive coil, a .001, 3 to 20kv
capacitor and a ground rod.

Thus far, I have devised two methods. The first is simple and inexpensive but only 15-20% efficient. It simply
involves breaking the current into pulses with a spark gap, and then transforming the voltage down and current up
with a transformer and increasing the pulse duration with a capacitor in parallel.

The second method will use a micro-processor to monitor voltage and current. The impedance is then adjusted
to make the charging current as smooth as possible. This circuit can also easily protect a battery from
overcharging. Bill Alek's controller might be the perfect solution for the task.
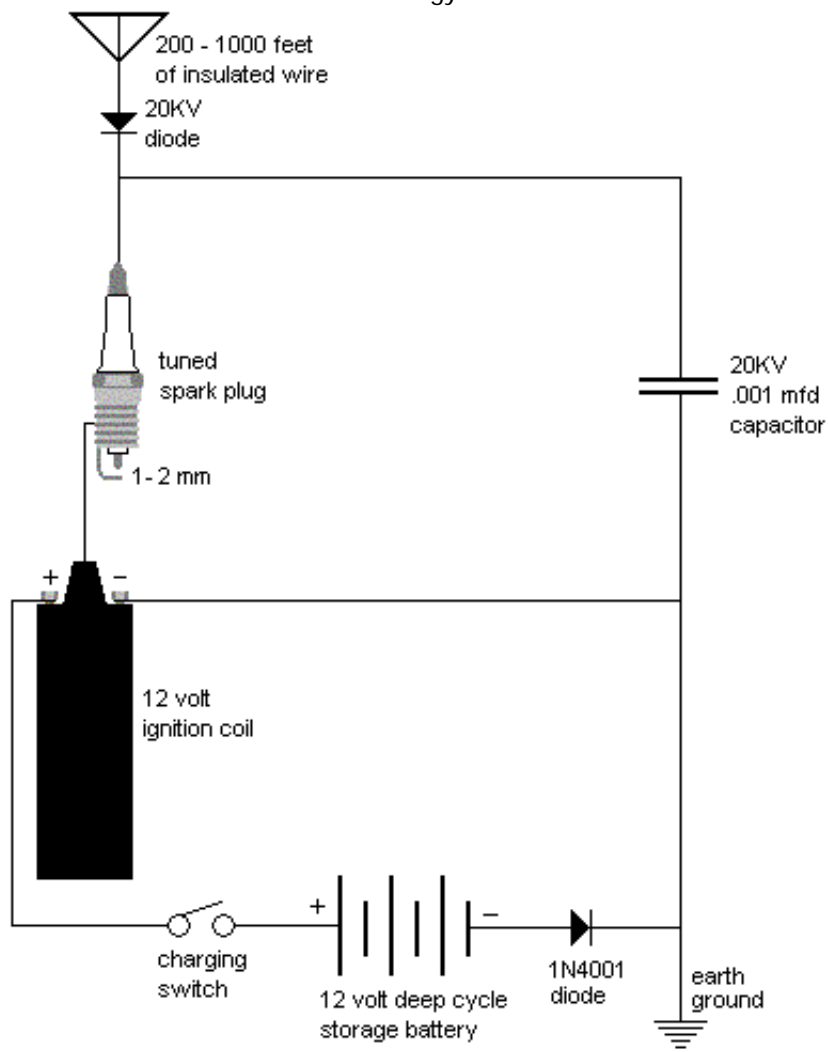
Perreault Conversion Circuit

click here for an updated version

The electret effect is more important than you realize. Any ordinary antenna will collect charge, but without the electret effect, most of it is dissipated before it can be tapped. The electric field created by the electret effect not only attracts the charge from the air, but then it traps it in the conductor. This effect will also be produced even in a vacuum.

Virtually all insulated cable exhibits some degree of the electret effect, which the wire manufacturers consider undesirable. Treating the coax will increase the electret effect at least 10 times. Treatment cost is negligible. Obviously, the treatment process is the essential piece to receiving enough energy to be useful. Teflon tape can be dangled from a cable and wonderful results can be obtained. In a thunderstorm, using an ordinary 400-foot cable with Teflon tape has produced a continuous arc eight feet long. Essentially, what you have is a type of Van De Graff Generator. I have not witnessed this myself but this appears to be possible because a lightning discharge releases energy that has been estimated to be in the billion watt range.

Conditioning the Cable

Buy cheap coax RF cable, that has a center wire and a shield cylindrical wire. Then cut off the outer plastic skin and put the whole cable into your oven and heat it up to about 100 degrees Celsius or more, so that the internal plastic insulation almost begins to melt.

Then apply from a D.C. high voltage source around 30 kilovolts or maybe a little less, so that there will be no arc-over yet inside the cable. Then let the cable cool down slowly again, but still apply the high voltage D.C.

When the cable has come down to room temperature again, it will be a pretty good electret!

Now hang this cable in the air and the outer layer of the shield metal (which does not have any plastic isolation skin anymore), will now attract lots of free ionized electrons from the air and charge up the outer shield metal of the cable. This way you can collect lots of more charges as before and have a much higher electrical output from this cable.

> Hope this helps
> Regards, Stefan

The electret effect is a problem in the manufacturing of coaxial cable. This problem arises from the process used to make insulated wire; an unwanted electret effect is created. Engineers work very hard to reduce the effect but are unable to completely eliminate it. What I am saying is that all insulated wire exhibits some electret effect. The engineers go to great lengths to minimize it. The treatment as suggested by Stefan Hartmann should increase the electret effect of the cable at least 100 times, and with some cable, as much as 1000 times (depending on how hard the engineers worked). The electret effect is present wherever plastic is in contact with a conductor. It is much better to use unshielded cable and it is cheaper as well. If you do use shielded cable, it might not draw as much radiant energy. To begin your radiant energy experiments string out a 300-foot length of ordinary coax cable and do not connect the other end to anything. Use the conversion circuit in this article to convert your collected charge into electrical power. When you ground this circuit do not use the one that is connected to the electric companies meter. If you do not get at least a couple of pops per minute from your spark plug you will need to condition your cable as explained by Stefan Hartmann. Tying a bunch of 2-foot pieces of Teflon tape to your cable will also increase its draw power.

Virtually any insulated wire has a small electric field surrounding it that attracts positively charged air molecules (called ions) to itself. This charged moving air mass induces a negative charge of static electricity that builds up in the cable conductor. Under most circumstances, the conductor in a cable is connected to a circuit and the current is absorbed without notice. Nevertheless, if the conductor is connected to a spark plug (whose threads are grounded) it will produce an electric arc across the spark gap each time the voltage in the cable rises to the limit of the spark plug's gap. In some cases with a long piece of cable and some air current (wind), the spark gap will arc almost continuously. During a thunderstorm, Paul Clint reported to me that he once witnessed an eight feet long arc during a thunderstorm. A continuous arc or one that is eight feet long indicates to me that a substantial amount of power was being received. This means that a treated piece of insulated wire can be strung out on a fence and used to generate enough power to provide a home owner with all they need. It also means that it is possible to generate power in winds that have previously been considered worthless (3-4 mph).

How can a small cable extract so much energy from little or no air currents?

This is easily explained. The energy collected from the cable is not derived from charge collection as one might first think. It is derived from induction, as the positive ions in the air rush towards the cable. As you may or may not be aware, the earth's atmosphere is a gigantic capacitor. At its upper level, air molecules are constantly being ionized and then as the air circulates, the charge is eventually carried to the ground that has a negative charge with respect to the upper atmosphere.

Ham radio operators will certainly confirm that a coaxial cable strung out, as an antenna, will become highly charged, especially in wet, stormy weather. The accumulation of charged ions is not possible in a humid environment. Therefore, the power is derived through charge induction rather than from static charge. This is clearly demonstrated from the fact that the power generated is directly proportional to the speed of the wind rather than the square of the speed.

Still, the wire hardly intersects any of the wind. How can a little wire collect so much?

The cross section of the wind from which power is collected is much larger than you might think. Remember that the electret effect creates an electric field, which attracts charged air molecules as a magnet attracts iron. The cross section of this field can be as great as 2 feet, so a 100-foot cable can intersect as much wind as a 16-foot diameter airfoil.

Have you measured the cable power output?

Measurement of the output of the cable is not a simple process. The output varies over several orders of magnitude for voltage, current, frequency, and is well beyond the capability of simple measuring devices. Because of this fact, I have devised a couple of indirect methods to measure output. In the first of these, I have connected a spark plug between a cable and ground so that whenever the voltage builds up to the arc-over value, a pulse of current is generated that can be counted. This method can be termed no more than a rough estimate because the shape and duration of the pulse still varies over a substantial range. Analysis of the pulses will eventually allow us to use an average and thus devise a formula that will give a close approximation of the power output.

The second method is simple and if done properly, very accurate. We simply place a resistive heating element between the generator and ground and then into a bucket of water. The output is then measured by the change in temperature of the water. Neither of the two methods takes into account the losses of the charging circuit, battery, or inverter, etc...

Does the electret effect wear out or dissipate over time?

The question as to whether the electret effect wears out is not a simple one to answer. It is clearly being used in a way that is unique. The fact of the matter is that, in general, the electret effect is unwanted, and engineers are normally working to prevent or eliminate it. The fact that they have to work very hard to do so is an indication

that it is stable. Thus, the best answer I can give is that it does not wear out in the short term (years).

How can I determine if the cable will produce more power for its cost than I would have to pay the utility company?

Again, this can only be done over a long time-period because it is dependant on wind, location, humidity and possibly other lesser, undetermined factors.

How does humidity affect cable operation?

Ham radio operators have reported that static charge builds up on their antennas more often and more intensely in times of high humidity, rain, or snow. The technical literature reports that most atmospheric charge is carried by aerosol particles of dust or water that collect hundreds, thousands, and sometimes tens of thousands of units of charge. As they collect more and more charge, these particles migrate toward the earth's surface and constitute a major component of the fair weather current.

Have you tested cable generator in other configurations such as a spiral, coil, grid, or vertical mode?

Optimum results are obtained by suspended an insulated cable between 5 to 15 feet above the ground in a horizontal straight line. Any deviation from this will reduce the output of the cable generator.

You must use an insulated cable that is strung out horizontally. For it to function properly there should be a swag to it.

Please see... http://www.nuenergy.org/alt/transducer.htm

If you see that the cable is physically vibrating you will know that it is set up properly. Any wire will vibrate but it needs to be electrically insulated and possess the electret effect to generate self charge. There is more than just wind that is involved. The cable will vibrate sometimes with only the slightest breeze. As you can see here there is a real energy source that is waiting to be harnessed. Essentially, we are utilizing the induction from a moving ion field. This is why a cable can be seen to physically vibrate. Where the seat of kinetic activity actually originates from I do not know. What I do know for certain is that energy is present in the system.

Will a bare wire generate a charge?

Bare wire will not generate a charge. The electret effect has to be present.

Please see... http://www.esdjournal.com/static/shower/shower.html

Has anyone measured the ion density of the atmosphere?

Yes, the average is 3000 ions per cubic meter. The figure is subject to stupendous variations of many orders of magnitude as shown by this quote from "Atmospheric Electricity in the Planetary Boundary Layer" by William A. Hoppel, R.V. Anderson and John C. Willet. "Most atmospheric processes are interrelated and cannot be studied in isolation, but it is possible to identify one or two dominant influences. In the case of Atmospheric electricity in the Planetary Boundary Layer, however, separating the various causes and their effects can be extremely difficult. In fact, this field may be unique with respect to its sensitivity to many disparate phenomena spanning a tremendous range of scales in both space and time. For example, locally produced turbulent fluctuations in space-charge density have an effect roughly comparable in magnitude to that of changes in the global thunderstorm activity on electric-field variations within the Planetary Boundary Layer."

The ion density does not appear to provide enough charge to account for the current generated by the cable. Are there other sources of energy contributing to the current?

Both the electric field of the earth (typically 100-200 volts) and that of the cable produce an effect called the induction charging mechanism. This is a physical process for particle charging involving the collision of pairs of particles in an ambient electric field. Electric charge induced on particles surface by the ambient electric field is made available for transfer when the two particles come into contact. A subsequent differential particle motion that is influenced by gravity is postulated to result in large scale charge separation. The specific role of induction charging in the electrification of thunderclouds has not been resolved.

Another effect that is unquestionably effecting the cable is the double layer effect. On the surface of a substance a layer of electric dipoles whose axes have an average orientation normal to the surface, double layers may appear on the interface of a solid and gas, liquid and gas, liquid and liquid, etc. They arise whenever media with different electron affinities (forces of attraction, or work function) are contiguous, and if dipoles are available. A net potential difference, the electrokinetic potential exists across the double layer. This effect is demonstrated in the super capacitor. Therefore, our cable acts like a super capacitor of high farads.

Yet, another source of atmospheric charge collected by the cable is due to **aerosol charges**. These particles of dust or water form dipoles and disproportionally collect one charge or the other. Where ions carry only single or double units of charge, aerosols carry hundreds, to tens of thousands, of units of charge. The fact humidity is such an important factor in the output of the cable indicates that aerosols are an important source of the energy it collects.

What else would be needed besides a cable to provide a good alternate electrical source for a home?

You would need a battery or bank of batteries, a charge controller, and a grid tied inverter.

     * Note: Paul Clint forwarded e-mails between him and Bruce Perreault to Jerry Decker who posted their discussion on Keelynet http://www.keelynet.com/electret.htm All e-mails between Paul Clint and Bruce Perreault are archived on hard-drive.

rexresearch.com
Home

Robert Adams: Motor-Generator

Links:
Robert Adams' Website: http://www.aethmogen.com
Kits: http://www.butlerlabs.com/es.htm
Discussion Group: http://groups.yahoo.com/group/free_energy/
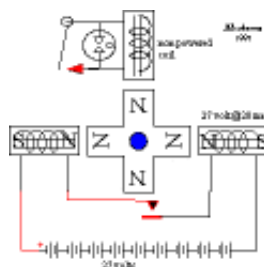
Eastern Bay News (1-18-2001)

Aether Energy an Alternative - Claim

A Whakatane-based scientist believes he is helping to create one of the greatest breakthroughs in human history. Denise Landau talks alternative clean energy production with one of the world's leading energy scientists.

After a lifetime devoted to researching alternative clean energy production Dr Robert Adams is about to publish his latest work which shows that aether, the building block of the physical universe, can be freely harnessed to produce clean, pollution-free energy.

Now aged 80, Dr Adams and his colleagues new work delivers mankind on to the doorstep of an unimaginably exciting and awe-inspiring future.

Take any image of science fiction and open your mind because that's the direction this new world of aether energy is offering, says Dr Adams.

He is internationally recognised as one of the world's five leading scientists in the field of research into the new clean energy technologies.

Aether scientists believe their discoveries effectively eliminate the theories of relativity and traditional views of physics and cosmology.

An international network of maverick "behind the scenes" scientists, such as Whakatane's Adams, is on the brink of publicly challenging the traditional Western scientific establishment.

They sincerely believe that the Earth's and the human race's very survival depends upon it.

Dr Adams says many ancient cultures were aware of the power of aether energy and used it for their people's and the environment's betterment.

So what is the aether and how can it be applied to our lives today?

Scientists describe aether as a superfluidic particulate medium which pervades all space - it is the building block of the physical universe. The medium, in one of its forms, is responsible for gravity and inertia.

They even go so far to say it is a medium controllable by mind and can be manipulated by thought.

Does a memory from the movie, Star Wars, and its mystical element illustrated by the Force ring any bells here?

Scientifically, these "outside the square" thinking individuals call themselves new energy scientists and Dr Adams latest book is entitled Special Update 2000 edition of Applied Modern 20th Century Aether Science.

"This new energy technology is going to change the world we live in on an immense scale."

Dr Adams formally lays claim to discovering a new law of Nature, which he designates 'the Adams Law'.

"I have proved over hundreds of thousands of hours of hard labour at laboratory benches and machine shops, that these aethric energies are manifesting at unity/zero point, whereby the bottom line is that there is no longer any reference point from which to base any kind of so-called 'efficiency' test."

Dr Adams' latest invention does read like something taken straight out of a Star Trek episode - the Adams triplex aethric energy motor generator.

This device is a super power, thermo, impulse, salient pole, open magnetic circuit, repulsion, self-

starting, reluctance electric motor generator.

The motor generator is so named because of it's unorthodox and unusual ability to manifest considerable aetheric energy from three different areas of the machine.

He says the revolutionary machine, the first of its kind in the world, provides economical, clean, safe power.

What it means, says Dr Adams, is every fossil-fuelled and nuclear power station in the world could be shut down in the space of three years.

Dr Adams talks about expanded inductive energy and energy harnessed at the air gap between his machine's rotors and stators. These two elements combined provides the driving power of the motor.

"The important roles played by these two sources of force have never before been properly highlighted.

"They have eluded mainstream academia and scientists for over a century in regard to their vital importance in machine design, and this explains why electric motors have never beer improved upon during these past 100 or so years."

He adds that it is incredible to realise that electrical engineers and scientists in this modern age of technology are still taught to use free trapped electromagnetic energy to destroy the source of the said energy, by placing these 'stone age' motors across the national grid systems and/or battery energy sources.

"In this brutal way, millions of megawatts of energy is wasted daily throughout the world and there is no excuse for allowing such a monstrous waste to persist any longer."

His supporting written documentation includes papers written by eminent scientific pioneers in ferromagnetics and aether technology, including the United Kingdom's pioneering engineer Dr Harold Aspden.

Dr Adams says his book contains the revelation of the century and is packed with undeniable evidence of the presence of the aether and it's awesome powers.

This exploration into the vast frontier of aether energy science technologies also outlines part of his own journey through the corridors of a fascinating and challenging world of new, clean, safe and inexhaustible source of energy, he says.

Dr Adams shares his own vital discoveries and experiences from a lifetime of critical analyses on the subject in conjunction with his collaborating colleagues world-wide.

He includes scientific papers written by scientists of eminence and international repute as pioneers in the fields of ferromagnetics and aether technology.

Dr Adams also deals with his own sceptics - with reverence and caustic soda alike - and includes

some of their narratives.

The book is a biography and a significant contribution to the history of modern day true science, a record if discovery and innovation which is fertile and absorbing, he believes.

"In writing this special update I am donating into the public domain further valuable information.

"This is particularly for the benefit of those interested in the new, clean free energy sciences with the view to fostering encouragement for these people, to join in the rank of their pioneers by collaborating and sharing information on an international basis."

Four years ago, former New Zealand Minister of Energy, Doug Kidd, publicly stated his belief in the concept of "over unity" machines operating in laboratories overseas at an address to the annual general meeting of The Energy Efficiency and Conservation Authority.

Mr Kidd referred to the almost science-fiction field of over-unity where new machines recorded output power at 28 times greater than input power from the likes of the Patterson power cell and where power continues to be produced long after the input source is turned off.

"I'm not talking about nuclear power," Mr Kidd explained. But the restrained anarchist lurking deep inside me is tickled by the thought that your line monopoly ... could become worthless junk, as would the dinosaur at Huntly and the large hunks of concrete we call hydro stations would become marginal stations.

"According to accepted notions of physics, it is not possible. But once upon a time it was accepted wisdom that the sun revolved around the Earth. Your life depended on believing it!"

Excerpts from:

Applied Modern 20th Century Aether Science *[Out of Print]*

Table of Contents

Tapping Nature's Clean Inexhaustible Energy With The Adams Technologies

Imagine your own plant at home, business, factory, milking shed, etc., to name but a few of the scores of sites and applications for such a device. Sounds like a dream?

No, it is no dream. Development of such a technology has been on-going right here in New Zealand in the Bay of Plenty for some years now by an internationally recognized scientist by the name of Dr. Robert Adams of Aethmogen Technologies.

Unprecedented progress is underway worldwide on new energy devices. Such devices will one day in the near future pave the way to the time when we will see an end to pollution. Such devices will play an enormous role in the doing away with the monstrosities we call power stations which presently interfere with our waterways and, especially in the case of the coal and oil fired stations polluting the air we breathe. Hydro stations with their pylons and substations straddling the countryside will meet a similar fate. The time will come when grid systems will not be sustainable even to the most affluent of nations and the world will have to turn to simpler and more cost effictive alternatives. Power stations, just as the computer industry has done, will downsize quite dramatically and continue to do so rapidly until establishments such as hospitals, universities, factories, etc., will no longer be their guests. Eventually the smaller new energy devices will accommodate these guests and they will become self-sustaining as will individual residents who will be able to own and operate their own power supply at a "one-off" cost and store these individual units quite comfortably in their basements or garages.

Dr. Adams has authored a new book on his own technologies titled "Special Update 2001 Edition of Applied Modern 20th Century Aether Science". This book covers the subjects of nature and pollution, politics, the environment, hte scientific establishment with its false teachings, aether energy technologies ond devices, modern calorimetric aether power measurement techniques, thermo-moter-generators, aetheric energy from mosfets and magnets, conventional electric motors and generators, etc.

Dr. Adams has, for over fifty years, had serious concerns over environmental pollution, having himself been involved at the coal face with power plants in New Zealand in his younger years. This concern has underwritten a virtual lifetime of work researching alternative energy. His concerns for his own country go deep - he states:

"New Zealand has, over many decades now, persistently exhibited a complex of lethargy towards its inventors and innovators in general - the sad and inevitable outcome if this attitude, as seen iover recent television programmes, has seen hoardes of the creme de la creme desert these shores

carrying with them their innovations to a much greater recognition and prosperity overseas. There are various reasons which contribute to nil growth in any particular regoin in the world, but the most lamentable is when a country or region ignores its own potential. Only of late, (perhaps as late as the last few years - and this probably because of media scrutiny and attention) has this shameful trend begun its reversal in New Zealand. I say "begun" because it is barely noticeable. Let New Zealand only hope it has not regressed too far before it can catch up with its overseas cousins is this regard. In my own situation, well in excess of a ball-park 95% of the recognition I have enjoyed from my work has come from international quarters, that being from the United Kingdom, USA, Hong Kong, Japan, Sri Lanka, Australia, Canada, Russio, Sweden and Austra and I have not to this day placed myself on the internet - yet!"1

The universal pace for economical and, more important, clean, pollution free energy has seen the passing of laws in California USA requiring that ten percent of all cars sold, starting in the year 2003, be zero emission vehicles. Other American States have followed suit, creating a potential market for fuel free automation. The race has well and truly begun in the new energy arena with the burgeoning European and Asian laboratories following the lead and turning their attentions from the purification of fossil fuels to the interrogation of alternative energy sources.

The electrical machine technology, developed in New Zealand by Dr. Adams of Aethmogen Technologies, in its various invented forms, is ideally suited to application in rural areas where there are expensive line charges for power supply, or no power access at all, as in remote locations.

The system can also be adapted to the provision of steam power with which to run turbines, steam central heating systems in homes, business complexes, industrial plants, hospitals, hotels, airports, etc.

The system is adaptable to all motive power requirements, i.e., from marine applications right on through to agricultural, horticultural, fisheries, forestry, major earthworks, aeronautical and aerospace projects. Its applications are widespread, land, sea and air.

For Greater Marine Safety ~

A boon to all boat owners and operators, whether their craft be dinghys, launches, yachts, tri-marans, luxury or ocean liner vessels, clean safe energy supply is now available for motive power, power for heating water, with additional supply for cooking, lighting and general heating purposes on board. The dangers and risks associated with using on board fuel and gas can now be totally eliminated. This clean power of the future is safe (no risk) and does not subject the environment to any interference whatsoever. It also has the unprecendented advantage of an as yet unprocured economical dominance over all other power alternatives.

Quotation - from Dr. Harold Aspden PhD, BSc, FIEE, FIMech E, MInst P, C. Eng, C.Phys. Department of Electrical Engineering, University of Southampton, England:

"...there seems no reason why the Adams motor cannot be developed rapidly for general use." (1994 - 1996).

Since Dr. Aspden undertook his evaluation of the Adams technology and came to the above

conclusion, the development of three different machine types have been completed and are now ready for aesthetic design formats to be considered with consequent construction for production purposes to follow.

Introduction into Applied Aether Energy Science

With the advent of harnessing aetheric energy with the applied Adams Technologies, it poses a difficult task to know the best possible starting point with which to describe this almost as yet virtually unknown technology in the mainstream of electrical sciences.

The decision I have taken is to commence at the grass roots, so to speak.

It all started during 1969 when I first determined to use permanent magnets to construct an electric motor generator that would defy Lenz's law and, in so doing, invent an electrical machine that would run at unity and, so too, in turn, defy certain other orthodox laws.

Before going on further, I feel you should all be aware of the reason why I decided to turn my attentions to developing a device which would display characteristics that would serve to exhibit that there were better ways of acheiving access to power or energy without recourse to man-made laws. I had long ago decided that ultimately all man-made laws required re-examination at one time or another and could never remain static in time - as time itself has constantly proved. Man-made laws, in particular those of physics and the allied sciences, have no path to follow, in that they tend to remain finite and exhibit the distinct inability to contain the characteristic of flexibility, which they must contain if they are to grow and expand at all, let alone grow and expand at the same pace of the human mind. Had the human mind taken upon itself the identity and stoliditude of these man-made Laws, the human condition would be a sad and sorry one today. Long enough had man subjected himself to the time-weary stagnant laws of physics and the electrical sciences and it seemed to me that in order for real progress to be made in this field, someone had to be brazen enough to stomach the inevitable sticks and stones and forge onwards to a totally new mentation. I had followed, throughout my many years of experience and constant studies, the works of other pioneers in other countries who had been theorising (more than experimenting in a practical sense) new ideas and hypotheses and it occured to me over and again that these scientists and inventors were trying to equate these new ideas with endless reams of unsuccessful calculations and equations based on the sacrosanct (and aging) man-made electrical and associated laws. I made up my mind that this was going to change, and change dramatically, if I was going to have anything to do with it. Many of these new pioneers, I felt, were (and are, even to this very day) trying to put new ideas up against old (and unfortunately still reigning) regimes and methods, which came into vogue long before the days of the great Leonardo da Vinci.

And so I started quietly to work according to the Laws of the Universe and Nature and along the way over the years I made some rather astonishing discoveries of my own which, at times, bowled me quite over, and still do. As time went on, empirical findings made me bold enough to come out of my shell and go public with my results of experimentation and discoveries - quietly at first. This was both good and bad for me and I was eventually forced to anticipate and indeed prepare myself for the onslaught to come. Come it did - of course!

What I was doing was an affront to every respectable teaching institution on the surface of the planet. Scores of electrical engineers and physicists bombarded me ad nauseum with the dogma, for instance, that, with my devices, I would get absolutely nowhere without closing the loop. At lectures this was one of the greater thorns in the sides of my contemporaries. Very few indeed were those attendees who gave this matter any in-depth thought at all, and those who did (brush away the cobwebs), as I lectured on, slowly nodded, quietly smiled and shouted no more (in the way people do when suddenly visited by an affliction of the dropped penny syndrome) ; they just listened with greater intensity and keen interest until the end of the lecture, when stunned murmering grew rapidly to an ever increasing buzz of heated dissertation and debate which, incidentally, rang through the lecture chambers long after I had departed. Such lectures, especially those (most) which were accompanied by at least an hour and more of question and answer sessions between the attendees and myself, were always a great joy for myself and I can say, with more than a little satisfaction, never boring for the attendees.

So it is for all my readers today to understand that, although the walk has been long, thorny and arduous at times, the journey has been one of the utmost intrigue, fulfillment and discovery wherein I have experienced many surprises myself. Red rags have turned to green lights, frustration to reward and, in the end, all quite good fun.

I describe matters now pertaining to calorimeters because, as we progress, it is found that they are vital instruments for this technology - so much so that I purport them to be the only accurate means of measuring power generated/harnessed within these devices of the Adams technologies. This fact, came to be because of the great difficulty in having to engage in applying empirical knowledge to working with this technology, as orthodox theories/methods are of no value whatsoever in the design and construction or testing of these super machines.

Late 1995 - 1996 heralded in the successful and sophisticated "Adams Thermo-Motor Generator" entering the kilowatt range at greater power and performance. In addition during that period many various types of calorimeters were also designed and built by myself. Experience, intuition and empirical knowledge has since led to new discoveries and more sophisticated and accurate calorimeters.

One special unit I will mention, but briefly, as it is on the classified file, is the Equilibrium Calorimeter. Now if equal masses of copper and water are heated, for instance, over flame, for equal periods of time, the temperature of the copper rises ten times as fast as the temperature of the water, and to cause the same temperature change of the water, it would have to be heated ten times as long. This massive variance, in addition to other factors to be accounted for, results in the necessity of tedious calculations which all have their resultant and inevitable error factors.

These complex ramifications of coefficients, specific heat, thermal conductivity, convection, radiation, absorption, insulation losses, have, ad infinitum, in their path of time immemorial, created ongoing contention to this day.

To put the matter to rest for my own sake, I turned to inventing a water calorimeter that would dispense with 'calculations' and need only to rely on 'measurements'. (Measurements can be relied upon; calculations, in calorimetry involving water, can not!). This is, then, the Equilibrium Calorimeter mentioned above.

In this type of water calorimeter, a small quantity of water and a short operation time is of paramount importance. The unit itself is unique in that its load heating element heats both the water and copper vessel simultaneously and as the machine being tested operates in the kilowatt range, a state of equilibrium in the calorimeter is very rapidly reached after switch on of the machine, and remains so to boiling point or any desired temperature. The copper vessel containes only 0.5 litre of water with a boiling point time of 2.0 minutes. The fact that all componentry and water reaches equilibrium so rapidly, ensures that the resultant accuracy and performance of the unit is such that insulation loss is so low for such a minimal period of time, it is negligible and can therefore be dismissed. The end result of this calorimeter invention procludes all doubtful calculations and therefore requires but three measurements only to be taken - those of mass, temperature and time - all of which, with the application of modern measuring methods, are extremely accurate, resulting in an overall maximisation of machine/device 'zero point' performance measurement, possibly never before attained.

On The Phenomena of Wattless (Currentless) Power

Extensive variations of current are possible and are, to say the least, of considerable proportions - upwards and beyond some 70%>. As stated previously, in my recent papers, I am confident that the current can be still further reduced.

The figures indicated at the end of this chapter show clearly that there is an anomaly which appears to defy a conclusive explanation of where the missing current (according to Ohms Law) has departed to! In reality, due to the subliminal velocity of the aetheric energy gaseous flow over the surface of the windings, the current becomes "lost" and, therefore, left behind.

In 1976 I discovered the machine delivers massive heat power to an external load upwards of 600%> above input power, this power then does not register in the machine or in the line load and must therefore be calorimetrically measured. This power is known as "wattless/currentless power".

To understand this phenomenon, one must be conversant with "Tesla Aether Energy Science". Current-less power was described by Tesla in 1889 in his radiant energy transformers, but he never got around to putting it to practical use. It is to be noted, at this point, that I am the original discoverer of the phenomena of currentless power in the "Adams" motor generator.

I quote herein by Gerry Vassilatoss in his 'Secrets of Cold War Technology' published by Borderlands Sciences Research Foundation, P.O. Box 220, Bayside C.A. 95524 U.S.A. 1996, (page 38 paragraph 2):

"*The Fractionation of Electric Currents* ~ Voltage pulses traversed the secondary surface like a gas pulse under increasing constriction. Until reaching the free end of coil, these gaseous pulses flowed over the copper surface rather than through it. Tesla referred to this specific manifestation as 'the skin effect'. In this the discharge greatly resembled the manner of gasses in motion over surfaces."

It is impossible to comprehend this 'Tesla Technology' without considerable knowledge of the

Aether. One must seek out and study the proofs, of which there are now many, that have been established by experimenters worldwide. It is a technology capable of being explained through gas dynamic analogues. The fact that even partial elimination of electrons from Aether currents takes place, indeed spells out that this is a new kind of electricity which could find no resolution in present electrical science. This new energy technology is going to change the world we live in on an immense scale.

To understand Tesla Aetheric Forces Technology, one must eliminate the notion that electrons are the working gremlins of electrostatic energies, for in this technology they are no longer the working gremlins. We are considering here an entirely different kind of electricity, endowed with totally different characteristics which, therefore, requires a new and different approach to the method of measuring the performance of any devices created as a result of the development of this technology, as the disparity between the two is immense.

An Adams D.C. Impulse Electric Motor can be designed in such a way that the succession of charge and discharge impulses develop energy of such magnitude that it may be possible to have control of the flow of conventional electricity electrons through the complex metallic lattice of the very long length of wire used in the stator system, due to its super luminal velocity, of which the gaseous pulse flows over the coil surface. This then would provide us with an electric motor that requires very little current at nominal voltage whilst yet delivering considerable power.

There are certain parameters required to be implemented which do not apply to conventional D.C. electric motors - those of repulsive impulsing operating potential, stator winding resistances, winding wire size and quantity and machine construction materials, etc. The established gaseous electrostatic electricity moves over the surface of the winding's wire at a super luminal velocity. This creates an enormous surge leaving the slower moving electrons behind and, hence, a consequent reduction in current flow is possible, according to machine parameter variables applied.

Electrical Energy Generation & The Vital Role Played by Temperature & Time Factors When Calculating Machine Performance

In considering the above we should first look at the question of "how is electrical energy generated? " To begin with we must dispose of the myth that electromagnetic machines generate electrical energy as is taught in our schools and universities by the establishment. So called "electric generators" do not generate electric power per se. They are mechanical devices which, due to their rotational field, act as a gating mechanism, tapping the aetheric energy field within the air gap between the machine stator and rotor, and delivering that energy externally in the form known to us as 'electrical energy'. This energy is ever present (omnipresent, as previously explained) but the machine must be in motion to harness it, not generate it.

NOTE: In the interests of simplicity for the reader , however, I will continue, in this paper, to use the words "generate/generated/generator" as the words are used in their normal and general context.

In electric motors we have the interesting situation whereby we apply stored, or 'generated' electric

power to supply motive force to do mechanical work. The motor is, however, also reliant on aetheric energy from the air gap of the device for rotational power.

From the foregoing, it is clearly evident that if the AETHER did not exist, as the establishment and Newtonians would have us believe, then there would be no aetheric force and, therefore, no manner of electric motor or generator would function, as there would, in turn, be no action at a distance, no lines of force, no magnetic fields and hence no Universe!

Translocating Potential Gradient to the Motor

On translocating potential gradient to the charged mass in a circuit element and sourcing it via impulse to the motor, will amplify the inherent magnetic unified charged mass and, for a finite time, retard, or very nearly block off electron flow, thus precluding current flow; this is termed the relaxation time of the mass of the circuit element, i.e., in this case, the motor stators including windings. There are at least two possible methods of causing a finite delay time thereby retarding current flow within the stator element, in addition to impulsing the source - one, of using doped winding wire (at present a difficult one) and - two, in designing the stator/s by incorporating sacred geometry, i.e., PI and PHI involving the Golden Ratio.

The collector element will then become a secondary battery being used in a conventional manner to power a load, which does not affect the primary source. This power so provided in the external load is free and sourced in such a way that the prime mover source is not being brutalised as where, in conventional motors, they are designed to do just that and are, in turn, themselves brutalised with resultant high temperature and extremely poor performance. Bluntly, their role is that of destroying their own source of potential gradient and eventually destroying themselves.

There is massive trapped energy in many natural materials, especially metals. Latent magnetic energy is ever present in these materials and this energy I describe within the structures of electric motors is found to play an important role together with that of the energy harnessed from the small air gap between the rotor and stator sections; this applies to both motors and generators alike.

Power source applied to electric motors expands the ever present covert electromagnetic flux of the metal materials, i.e., the iron core and copper windings. It is not the impressed energy applied to the motor that creates the inductive field, as taught in universities and colleges alike; the magnetic flux field "already" exists in its natural state within the stator system; the application of energy into the system simply "expands" the natural latent inherent inductive energy residing therein.

This expanded inductive energy, in conjunction with the energy harnessed at the air gap between the rotor and stators, provides the driving power of the motor. The important roles played by these two sources of force have "never before" been properly highlighted. They have eluded mainstream academia and scientists alike for over a "century" in regard to their vital importance in machine design and this explains "why" electric motors have "never" been improved upon during these past 100 odd years.

The role played by these two forces require "more investigation and understanding" in the part they play in magnetism and inductance as applied to electric motors. The design parameters concerning

these two forces far outweigh the importance of I²R losses.

It is incredible indeed to realise that electrical engineers and scientists in this modern age of technology are still taught to use free trapped electromagnetic energy to destroy the source of the said energy, by placing these flintstone motors across the National Grid Systems and/or battery energy sources. In this brutal way, millions of megawatts of energy is wasted daily throughout the world in the manner described above and there is no excuse for allowing such a monstrous waste to persist any longer. Every fossil fuelled and nuclear power station in the world could be shut down in the space of three years.

Unity, Zero Point, Over-Unity, Over 100% & Various Other Definitions Describing Performance of New Energy Devices

There is a problem with the above definitions, but that is not the fault of people like ourselves in the New Energy field - it is the fault of false teachings and mind entrenchment of the methods adapted for the performance testing of grossly inefficient conventional electric machines.

I do not subscribe to the definitions of "over 100% EFF" or "beyond unity". There can be no "beyond unity" as the totality of the Universe is Unity. This then tells us that conventional electrical machine "efficiency testing proceedures" adapted to the testing of new energy devices can only be described as bizarre and are of no substance whatsoever. New mentation must evolve whereby our new energy devices' performances are 'measured' in accordance with the truth and not with man-made laws and "presumptions" still in vogue today.

The definitions of "over unity", "beyond unity", etc., are so much in use in present day New Energy Science that in some of my writings I opted for the status quo in using such terms myself as the task of de-programming our thinking on the matter is still very much in its embryonic state. In this updated version of my writings I have made more of an effort to break the mould of using such terminology as to continuing to do so can only retard any progress and confuse the reader and young student.

Ohm's Law

Since it is proven that the Adams Technologies, as applied to the Adams Electric Motor Generator inventions, violate OHMS LAW, the use of conventional instrumentation and of OHMS LAW itself, for evaluation of performance, results in gross errors. The heart of the problem here, lies in the fact that standard electricity, as we know it, is a totally different kind of energy to that which is directly gated from the aether, the nature of this energy being such that it does not respond to conventional electrical instrumentation, nor does it obey OHMS LAW. This orthodox instrumentation is found to be grossly in error, just as is the application of OHMS LAW itself for power measurement, simply because the basic design of the said instrumentation used INVOLVES OHMS LAW!

This then heralds in the need of an ocean of new electrical scientific teachings, in order to

accommodate these new technologies into electrical engineering texts for colleges and universities. Firstly, a NEW MENTATION must take place, where teachers and students alike will need to de-programme their present knowledge of conventional electricity to that of electricity harnessed from the aether. It is time NOW for our future young student scientists and electrical and electronic engineers to study this vast new clean and inexhaustible source of energy along with its massive implications and applications.

This discovery of the VIOLATION OF OHMS LAW is monumental and unprecedented, but also goes further in that it renders all conventional digital and analogue instruments as obsolete tools for use in this new technology. Instrument manufacturers worldwide will also require to re-programme their mentation in order to enter this new dimension of technology and proceed to formulate new instrumentation with which to take the place of their predecessors. This will pose a difficult task, as the Adams Technologies have violated other so-called LAWS of science.

It is on account of the aforegoing ambiguous circumstances that I resorted to calorimetry for measuring input and output power, in doing so, dispensed with the need for any of the unreliable instrumentation or OHMS LAW itself and thus, too, as an aside, relegating obscurantism back into the realm of darkness from whence it came, since measurements made in the science of calorimetry are indisputable. Realistically, since calorimetric measurements have been proven to be the only accurate and reliable means of proving unity and power measurement, then orthodox electrical instrumentation has become dispensible in this new era of technology.

The question then arises, as it inevitable must as a natural consequence of the problem, "Do we need new instrumentation at all?", in view of the probability existing that any new design structure of such new instrumentation could create some rather insurmountable obstacles not encountered with the use of calorimetry.

Input Power Measurement & Its Significance in the Adams Technologies

In relation to the measuring of input power to the Adams motor generator, where the question of differentiating between the heat produced by the motor section and the heat produced by the generator section, particularly where the motor generator is one integral unit, there poses a controversial situation of "how best to calculate the measurement" if the measurement "is determined calorimetrically"?

In reality, it is irrelevant to measure the quantities of heat of either sections in any case.

I made the decision some years ago to abandon trying to differentiate between the two measurements and, in so doing, put an end to the unnecessary laborious hours spent in complex calculations by measuring total heat power and to simply consider any heat energy not harnessed as an additional loss together with other normal losses.

This is entirely acceptable for the very reason that "all" losses are of no consequence whatsoever in this technology, as the machine in question is operating in the dimension commonly known and referred to in scientific circles as "Zero Point", i.e., energy generation being "infinite" with power incrementally increasing with time, as the calorimetric graph indicates. [Ed - unprinted on web]

I refer the reader, at this point, to an internationally recognised scientist in applied aetheric energy technologies, one Dr. Peter Lindemann of the USA, who quotes to me in correspondence of October 16 1999 :-

"Thank you for the package of your latest writing. In my humble opinion, it is the best material I have seen to date. Your documentation on the violation of Ohms Law is monumental! Congratulations. Also, your eloquent defense of yourself and others in the field is masterful. Spoken as the real leader you are.

Now that you know, with confidence, that Ohms Law only operates within a narrow window, and that once outside this window, it begins to fail as a useful method to calculate accurately, the behaviour of certain equipment, such as your machines, surely you can now better appreciate what I have stated in the past, that we do not know what the real equivalences are between electrical work as Watt-Hours, heat work as BTUs, and mechanical work as Foot-Pounds. If we really do not know what the equivalences are, then we cannot calculate conversions between these units of measure! I really do not know how to make this point more emphatically!"

And, in further correspondence , he quotes :-

"There is also another way of looking at the 'efficiency' of your machine. Your machine recovers all of the electrical input. Then, it also produces mechanical energy and heat energy. Since no mechanical work or heat is put into the machine, these outputs represent and INFINITE PERCENTAGE GAIN over the zero amounts put in......more than enough to irrefutably crush conventional explanations! Absolutely spectacular! You are liberating real work from the aether!

Since we really don't know the 'equivalent' values of electrical mechanical heat in real units, it seems best to measure inputs and outputs for each energy manifestation separately. In this way, your machine shines like a beacon toward a new horrizon. It also begs the question - 'Since your are getting all of the electricity you put in back out, where does the heat and mechanical energy come from?' This way of looking at it shatters any hope of finding an explanation within the 'conversion' or 'efficiency' ideas of the 'First Law of Thermodynamics'. The real efficiency of your machine is UNKNOWN because it proves that nothing is being converted into anything else. Energy affects are simply APPEARING FROM 'the aether', 'nowhere', 'counter space'. 'the Zero Point' ... you name it. The truth is, we still don't know how best to do it.

What we can measure is: Voltage (potential difference) ~ Temperature (thermal difference) ~ Mass (weight or atomic volume) ~ Distance (length) ~ Time (duration).

The cross product between temperature and mass gives us WORK units of Calories or BTUs. The cross product of distance and mass gives us WORK units of Foot-Pounds or Dyne-Centimeters, which can also be expressed as Joules. (1 Joule = 0.7375 foot-pounds = 107 Dyne-Centimeters). Watts are defined as a "Joule per second" or as volts times amperes. This makes a Joule also equal to a Watt-Second by definition. But since "current" and "resistance" are generated by calculation according to Ohm's Law, the Watt-Second cannot be measured as a unit of electrical work, it can only be measured as a unit of mechanical work. Without Ohm's Law, there is no way to determine WORK in electrical machinery, unless you resort to Calorimetry. Then and only then, can you

measure things again, and get away from calculating. This is what you are already doing, which is exactly correct!" (Peter A. Lindemann, Borderland Sciences Research Foundation, U.S.A.)

The Adams Thermo-Motor Generator

This device is a super power, thermo, impulse, salient pole, open magnetic circuit, repulsion, self-starting, reluctance electric motor generator. The "Adams Triplex Aetheric Energy Motor Generator" is so named in view of its unorthodox and unusual ability to manifest considerable aetheric energy from three different areas of the machine.

The stator system, with its ability to reach high temperatures very rapidly, is designed to harness this heat from the cores of the stators via water circulation. The second source of energy is derived from loading the machine as a generator.

Temperature, material types and geometric secrets which govern the high output power and performance of the Adams Thermo-motor Generator.

This is a super power machine, the first of its kind in the world, with the capability of manifesting massive heat power internally in such a way that it precludes any damage due to heat affecting the rare earth magnets in its rotor system. The rotor is designed and engineered in such a way that it gates massive aetheric energy in the form of heat which is transferred by the rotor system to the water jacket system of the machine stators. The machine rotor carries out this operation whilst itself remaining relatively cool - at most, a few degrees above ambient - whilst the heat which is manifested on load is capable of reaching into hundreds of degrees and kilowatts of power. On account of the foregoing mastered conditions of temperature control and transfer of manifested power to the stator water jacket system, the life span of the rare earth magnets remains unchanged, i.e., no deterioration takes place. The rotor of this super power machine was invented late 1995 and perfected into a machine in early 1996.

In comparison to an orthodox machine constructed of standard materials, this machine consists of different materials in its make-up of construction, the materials of which are of specific geometric dimensions, mass, etc., and so placed geometrically inside the rotor as to gate the awesome aetheric power that is inherrent in the 1.25mm air gap of the machine and to deliver it, in the form of heat and/or electric power, to a load.

There are three sources of heat energy manifested in the Adams Thermo-motor Generator version and all three are physically isolated from each other. These three heat sources appear at :-

The Thermo-motor Generator, (whereby heat is transferred via water through pipes to a seperate calorimeter) ;
The Machine Mosfet Calorimeter, (heated by energy manifesting at the mosfet) and -
The machine Load Equilibrium Calorimeter (heated by the electrical loading of the machine).
The machine Load Equilibrium Calorimeter is the vital measuring instrument in the line-up, as it MEASURES the output power of the machine proper. The other two heat manifestations are by no means small and are free spin offs which can be readily harnessed.

The Adams Aetheric Energy Electric Motor-Generator Technologies, over the past ten years, have heralded in new innovations that have culminated in very significant discoveries including that of the use of certain materials not normally used in the construction of orthodox electrical machines, resulting in the manifestation of massive power, in the form of heat, from the Thermo-motor-generator designs, at undreamed of ratios of input power to output power.

There are now "proven" natural laws pertaining to energy which render the orthodox "assumptions" of the establishment down to the realms of the obsolete and, however troublesome to accept, include those contained in the hypotheses traditionally served at the banquet hall tables seated by Einstein's Relativity, Quantum Mechanics, The Laws of Thermodynamics, Lenz's Law, Ohms Law and others. The truth of the entire situation is that I, Robert G. Adams, have proved, over hundreds and thousands of hours hard labour at the laboratory benches and machine shops, with the aid of intuition and empirical knowledge, that these aetheric energies are manifesting at unity/zero point and whereby the bottom line is that there is no longer any reference point from which to base any kind of so-called "efficiency" test. So the word "efficiency", with regard to aetheric energies simply cannot possibly apply because the only way by which to calculate the "efficiency" of the omnipresent would be to draw up scales of astronomical mathematical proportions that such scales would ultimately become eternal and infinite, and totally impossible to monitor, police or keep track of. Utterly beyond the ability of mankind. And so the term "efficiency" cannot ever be applied to "aetheric energy ", or, for that matter, the technology/ies invented or created by which mankind may have the capability to gate or harness it. And so the term "efficiency", here in the case of aetheric energies, becomes a nonentity forever and a day, and I hereby lay claim to the original discovery and, indeed, acknowledgement of this "Law of Nature" and hereby designate this discovery "The Adams Law". The 'Adams Law' also encompasses many other discoveries I have made pertaining to Ohms Law, Lenz's Law, etc.

The seed of original doubt of the explanations given me from my peers in relation to magnetism, electromagnetism, inductance, magnetic radiation - became apparent to me at the age of nine years and, for some reason convinced me that there was something unaccounted for. Hence, as aforementioned, as time progressed, I made up my mind that a change had to come about and that sacrosanct orthodoxy had to be the victim of that change. Yes, difficult as it would have been for the Ceasars to comprehend, let alone possibly accept, even the mighty Rome had to fall - one day!

The Adams Triplex Aetheric Energy Motor Generator

This device is a super power, thermo, impulse, salient pole, open magnetic circuit, repulsion, self-starting, reluctance electric motor generator. The "Adams Triplex Aetheric Energy Motor Generator" is so named in view of its unorthodox and unusual ability to manifest considerable aetheric energy from three different areas of the machine.

The stator system, with its ability to reach high temperatures very rapidly, is designed to harness this heat from the cores of the stators via water circulation. The second source of energy is derived from loading the machine as a generator.

The heat in the stator system is present whether the machine is run in a no-load or loaded condition. When loaded, however, the heat in the stator system increases rapidly and "continues" to do so

during the period of operation.

A further and third source of aetheric heat energy is manifested at the mosfet. This heat is also harnessed by the heating of water. This mosfet is set inside the copper storage vessel (or calorimeter) for measurement purposes.

The total heat from all three sources can reach upwards of eight (8) times the input/heat power.

A unique method of successfully transferring the heat from the stator system is water circulation within the stator cores and, as the stators are water cooled, it provides protection for the windings from burning out ; this is of paramount importance because as the machine is running "at unity" the heat manifesting at the stators "continues" to rise with time. The water so heated is circulated with the aid of an electronic pump which transports it to a holding tank/calorimeter for measurement purposes.

In addition to the unique structure of the stator system, is that of the rotor. The rotor was invented and perfected during 1996. Its materials, in addition to the magnets and the dimensions and geometrical placements of the said materials, are vital to the massive manifestation of heat that results from its structure and that of the stator system and its technological parameters. The rotor, however, playing the major role, remains the coolest part of the machine.

This machine is revolutionary and the first of its kind in the world and provides economical clean safe power. In an actual domestic application installation the machine would, of course, have a common holding hot water cylinder which would receive all three sources of the aetheric heat energies manifest within the machine componentry.

UK Patent # 2,282,708

ELECTRICAL MOTOR-GENERATOR
(12-04-1995)

by
Harold Aspden (UK) & Robert George Adams (NZ)

Date of Filing: 30.09.1993 // *Application No*: 9320215.8

INTeL6: HO2K 29/0823/5223/66/I HO2K 1/27
UKCL(Edition N): H2A   AKC2 AKR 1   AK1O8 AK12O AK12 1 AK200 AK214R AK2 165 AK217R AK3O2B AK3O3R AK800

Documents Cited:
GB 0547608 ~ US 5258697 ~ US 4972112   ~ US 4873463

Field of Search:
UK CL (Edition M) H2A AKRR AKR1 AKR6 AKR9
INT CL5 HO2K 23/62 29/08 29/10 29/12 53/00 57/00

Agent and/or Address for Service: Harold Aspden, Acres High, Hadrian Way, Chilworth, Southhampton, UK SO16 7HZ

Robert George Adams: 46 Landing Rd., Whakatane, New Zealand

Abstract ~

An electrodynamic motor-generator has a salient pole permanent magnet rotor interacting with salient stator poies to form a machine operating on the magnetic reluctance principle. The intrinsic ferromagnetic power of the magnets provides the drive torque by bringing the poles into register whilst current pulses demagnetize the stator poles as the poles separate. In as much as less power is needed for stator demagnetization than is fed into the reluctance drive by the thermodynamic system powering the ferromagnetic state, the machine operates regeneratively by virtue of stator winding interconnection with unequal number of rotor and stator poles. A rotor construction is disclosed (Fig 6, 7). The current pulse may be such as to cause replusion of the rotor poles.

Field of Invention ~

This invention relates to a form of electric motor which serves a generating function in that the machine can act regeneratively to develop output electrical power or can generate mechanical drive torque with unusually high efficiency in relation to electrical power input.

The field of invention is that of switched reluctance motors, meaning machines which have salient poles and operate by virtue of the mutual magnetic attraction and / or repulsion as between magnetized poles. The invention particularly concerns a form of reluctance motor which incorporates permanent magnets to establish magnetic polarization.

Background of the Invention ~

There have been proposals in the past for machines in which the relative motion of magnets can in some way develop unusually strong force actions which are said to result in more power output than is supplied as electrical input.

By orthodox electrical engineering principles such suggestions have seemed to contradict accepted principles of physics, but it is becoming increasingly evident that conformity with the first law of thermodynamics allows a gain in the electromechanical power balance provided it is matched by a thermal cooling.

In this sense, one needs to extend the physical background of the cooling medium to include, not just the machine structure and the immediate ambient environment, but also the sub-quantum level of what is termed, in modern physics, the zero-point field. This is the field associated with the Planck constant. Energy is constantly being exchanged as between that activity and coextensive matter forms but normally these energy fluctuations preserve, on balance, an equilibrium condition so that this action passes unnoticed at the technology level.

Physicists are becoming more and more aware of the fact that, as with gravitation, so magnetism is a route by which we can gain access to the sea of energy that pervades the vacuum. Historically, the energy balance has been written in mathematical terms by assigning 'negative' potential to

gravitation or magnetism. However, this is only a disguised way of saying that the vacuum field, suitably influenced by the gravitating mass of a body in the locality or by magnetism in a ferromagnet has both the capacity and an urge to shed energy.

Now, however, there is growing awareness of the technological energy generating potential of this field background and interest is developing in techniques for 'pumping' the coupling between matter and vacuum field to derive power from that hidden energy source. Such research may establish that this action will draw on the 2. 7K cosmic background temperature of the space medium through which the Earth travels at some 400 km/s. The effect contemplated could well leave a cool vapour trail' in space as a machine delivering heat, or delivering a more useful electrical form of energy that will revert to heat, travels with body Earth through that space.

In pure physics terms, relevant background is of recent record in the August 1993 issue of *Physical Review E*, vol. 48, pp. 1562-1565 under the title: 'Extracting energy and heat from the vacuum', authored by D.C. Cole and H. E. Puthoff. Though the connection is not referenced in that paper, one of its author's presented experimental evidence on that theme at an April 1993 conference held in Denver USA. The plasma power generating device discussed at that conference was the subject of U. S. Patent No. 5,018,180, the inventor of record being K. R. Shoulders.

The invention, to be described below, operates by extracting energy from a magnetic system in a motor and the relevant scientific background to this technology can be appreciated from the teachings of E.B. Moullin, a Cambridge Professor of Electrical Engineering who was a President of the Institution of Electrical Engineers in UK.

That prior art will be described below as part of the explanation of the operation of the invention.

The invention presented here concerns specific structural design features of a machine adapted for robust operation, but these also have novelty and special merit in a functional operation. What is described is quite distinct from prior art proposals, one being a novel kind of motor proposed by Gareth Jones at a 1988 symposium held in Hull, Canada under the auspices of the Planetary Association for Clean Energy. Jones suggested the adaptation of an automobile alternator which generates three-phase a. c. for rectification and use as a power supply for the electrics in the automobile. This alternator has a permanent magnet rotor and Jones suggested that it could be used, with high efficiency gain and torque performance, by operating it as a motor with the three-phase winding circuit excited so as to promote strong repulsion between the magnet poles and the stator poles after the poles had come into register. However, the Jones machine is not one exploiting the advantages of the invention to be described, because it is not strictly a reluctance motor having salient poles on both stator and rotor. The stator poles in the Jones machine are formed by the winding configuration in a slotted stator form, the many slots being uniformly distributed around the inner circumference of the stator and not constituting a pole system which lends itself to the magnetic flux actions to be described by reference to the E.B. Moullin experiment.

The Jones machine operates by generating a rotating stator field which, in a sense, pushes the rotor poles forward rather than pulling them in the manner seen in the normal synchronous motor. Accordingly, the Jones machine relies on the electric current excitation of the motor producing a field system which rotates smoothly but has a polarity pattern which is forced by the commutation control to keep behind the rotor poles in asserting a continuous repulsive drive.

Another prior art proposal which is distinguished from this invention is that of one of the applicants, H. Aspden, namely the subject of U.K. Patent No. 2,234,863 (counterpart U.S. Patent Serial No. (4,975,608). Although this latter invention is concerned with extracting energy from the field by the same physical process as the subject invention, the technique for accessing that energy is not optimum in respect of the structure or method used. Whereas in this earlier disclosure, the switching of the reluctance drive excited the poles in their approach phase, the subject invention, in one of its aspects, offers distinct advantages by demagnetization or reversal of magnetization in the pole separation phase of operation.

There are unexpected advantages in the implementation proposed by the subject invention, inasmuch as recent research has confirmed that it requires less input power to switch off the mutual attraction across an air gap between a magnet and an electromagnet than it does to switch it on. Usually, in electromagnetism, a reversal symmetry is expected, arising from conventional teaching of the way forward and back magnetomotive forces govern the resulting flux in a magnetic circuit. This will be further explained after describing the scope of the invention.

Brief Description of the Invention ~

According to one aspect of the invention, an electrodynamic motor-generator machine comprises a stator configured to provide a set of stator poles, a corresponding set of magnetizing windings mounted on the stator pole set, a rotor having two sections each of which has a set of salient pole pieces, the rotor sections being axially spaced along the axis of rotation of the rotor, rotor magnetization means disposed between the two rotor sections arranged to produce a unidirectional magnetic field which magnetically polarizes the rotor poles, whereby the pole faces of one rotor section all have a north polarity and the pole faces of the other rotor section all have a south polarity and electric circuit connections between an electric current source and the stator magnetizing windings arranged to regulate the operation of the machine by admitting current pulses for a duration determined according to the angular position of the rotor, which pulses have a direction tending to oppose the polarization induced in the stator by the rotor polarization as stator and rotor poles separate from an in-register position, whereby the action of the rotor magnetization means provides a reluctance motor drive force to bring stator and rotor poles into register and the action of the stator magnetization windings opposes the counterpart reluctance braking effect as the poles separate.

According to a feature of the invention, the circuit connecting the electric current source and the stator magnetizing windings is designed to deliver current pulses which are of sufficient strength and duration to provide demagnetization of the stator poles as the stator and rotor poles separate from an in-register position.In this regard it is noted that in order to suppress the reluctance drive torque or brake torque, depending upon whether poles are converging or separating, a certain amount of electrical power must be fed to the magnetizing windings on the stator. In a sense these windings are really 'demagnetizing windings' because the polarity of the circuit connections admit the pulse current in the demagnetizing direction. However, it is more usual to refer to windings on magnetic cores as 'magnetizing windings' even though they can function as primary windings or secondary windings, the former serving the magnetization function with input power and the latter serving a demagnetizing function with return of power.

According to another feature of the invention, the circuit connecting the electric current source and the stator magnetizing windings is designed to deliver current pulses which are of sufficient strength and duration to provide a reversal of magnetic flux direction in the stator poles as the stator and rotor poles separate from an in-register position, whereby to draw on power supplied from the electric current source to provide additional forward drive torque.

According to a further feature of this invention, the electric current source connected to stator magnetizing winding of a first stator pole comprises, at least partially, the electrical pulses induced in the stator magnetizing winding of a different second stator pole, the stator pole set configuration in relation to the rotor pole set configuration being such that the first stator pole is coming into register with a rotor pole as the second stator pole separates from its in register position with a rotor pole.

This means that the magnetizing windings of two stator poles are connected so that both serve a 'demagnetizing' function, one in resisting the magnetic action of the mutual attraction in pulling poles into register, an action which develops a current pulse output and one in absorbing this current pulse, again by resisting the magnetic inter-pole action to demagnetize the stator pole as its associated rotor pole separates.

In order to facilitate the function governed by this circuit 10 connection between stator magnetizing windings, a phase difference is needed and this is introduced by designing the machine to have a different number of poles in a set of stator poles from the number of rotor poles in each rotor section. Together with the dual rotor section feature, this has the additional merit of assuring a smoother torque action and reducing magnetic flux fluctuations and leakage effects which contribute substantially to machine efficiency.

Thus, according to another feature of the invention, the stator configuration provides pole pieces which are common to both rotor sections in the sense that when stator and rotor poles are in-register the stator pole pieces constitute bridging members for magnetic flux closure in a magnetic circuit including that of the rotor magnetization means disposed between the two rotor sections.

Preferably, the number of poles in a set of stator poles and the number of rotor poles in each section do not share a common integer factor, the number of rotor poles in one rotor section is the same as that in the other rotor section and the number of poles in a stator set and the number of poles in a rotor section differs by one, with the pole faces According to a further feature of the invention, the electric current source connected to a stator magnetizing winding of a first stator pole comprises, at least partially, the electrical pulses induced in the stator magnetizing winding of a different second stator pole, the stator pole set configuration in relation to the rotor pole set configuration being such that the first stator pole is coming into register with a rotor pole as being of sufficient angular width to assure that the magnetic flux produced by the rotor magnetization means can find a circuital magnetic flux closure route through the bridging path of a stator pole and through corresponding rotor poles for any angular position of the rotor.

It is also preferable from a design viewpoint for the stator pole faces of this invention to have an angular width that is no greater than half the angular width of a rotor pole and for the rotor sections to comprise circular steel laminations in which the rotor poles are formed as large teeth at the perimeter with the rotor magnetization means comprising a magnetic core structure the end faces of which abut two assemblies of such laminations forming the two rotor sections.

According to a further feature of the invention, the rotor magnetization means comprises at least one permanent magnet located with its polarization axis parallel with the rotor axis. The motor-generator may include an apertured metal disc that is of a non-magnetizable substance mounted on a rotor shaft and positioned intermediate the two rotor sections, each aperture providing location for a permanent magnet, whereby the centrifugal forces acting on the permanent magnet as the rotor rotates are absorbed by the stresses set up in the disc. Also, the rotor may be mounted on a shaft that is of a non-magnetizable substance, whereby to minimize magnetic leakage from the rotor magnetizing means through that shaft.

According to another aspect of the invention, an electrodynamic motor-generator machine comprises a stator configured to provide a set of stator poles, a corresponding set of magnetizing windings mounted on the stator pole set, a rotor having two sections each of which has a set of salient pole pieces, the rotor sections being axially spaced along the axis of rotation of the rotor, rotor magnetization means incorporated in the rotor structure and arranged to polarize the rotor poles, whereby the pole faces of one rotor section all have a north polarity and the pole faces of the other rotor section all have a south polarity and electric circuit connections between an electric current source and the stator magnetizing windings arranged to regulate the operation of the machine by admitting current pulses for a duration determined according to the angular position of the rotor, which pulses have a direction tending to oppose the polarization induced in the stator by the rotor polarization as stator and rotor poles separate from an in-register position, whereby the action of the rotor magnetization means provides a reluctance motor drive force to bring stator and rotor poles into register and the action of the stator magnetization windings opposes the counterpart reluctance braking effect as the poles separate.

According to a feature of this latter aspect of the invention, the electric current source connected to a stator magnetizing winding of a first stator pole comprises, at least partially, the electrical pulses induced in the stator magnetizing winding of a different second stator pole, the stator pole set configuration in relation to the rotor pole set configuration being such that the first stator pole is coming into register with a rotor pole as the second stator pole separates from its in-register position with a rotor pole.

Brief Description of the Drawings ~

Fig. 1 presents magnetic core test data showing how the volt-amp reactance power required to set up a constant magnetic flux action in an air gap, as assured by constant a. c. voltage excitation of a magnetizing winding, falls short of the associated power of the potential implicit in the force action across that air gap.
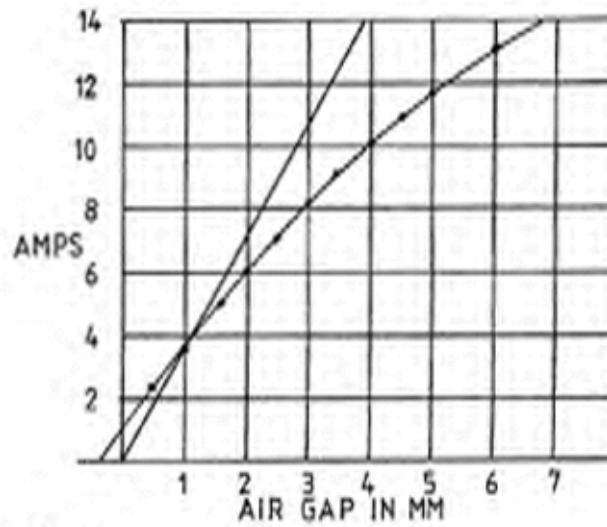
FIG. 1

Fig. 2 depicts the test structure to which Fig. I data applies.

FIG. 2
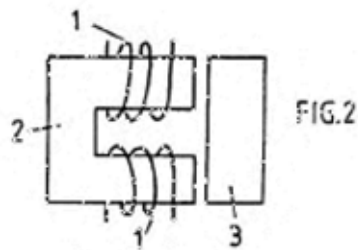
Fig. 3 depicts the magnetization action at work in causing magnetic 5 flux to traverse an airgap and turn a corner in a circuit through a magnetic core.

FIG. 3
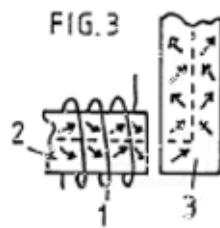
Fig. 4 shows the configuration of a test device used to prove the operating principles of the invention described.
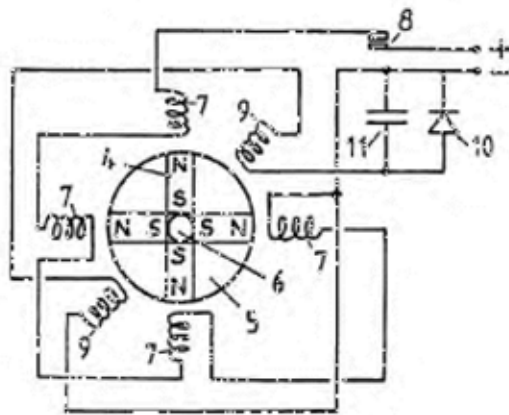
FIG. 4

Fig. 5 in its several illustrations depicts the progressive rotor pole to stator pole relationship as a rotor turns through a range of angular positions in a preferred embodiment of a machine according to the invention.
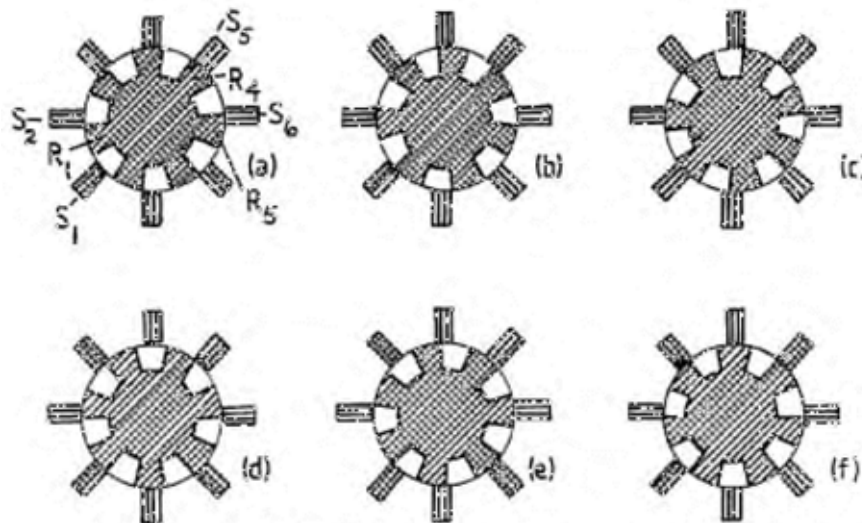
FIG. 5

Fig. 6 shows the form of a disc member which provides location for four permanent magnets in the machine described.

FIG. 6
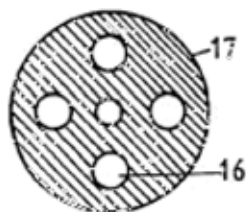
Fig. 7 shows a cross-section of the magnetic circuit structure of a machine embodying the invention.

Fig. 8 shows a six stator pole configuration with a seven pole rotor and depicts a schematic series connected linking of the magnetizing windings of diametrically opposite stator poles.

Detailed Description of the Invention ~

The fact that one can extract energy from the source which powers the intrinsic ferromagnetic state is not explicitly evident from existing textbooks, but it is implicit and, indeed, does become explicit once pointed out, in one textbook authored by F. B. Moullin.

His book *The Principles of Electromagnetism* published by Clarendon Press, Oxford (3rd Edition, 1955) describes on pages 168-174 an experiment concerned with the effect of air gaps between poles in a magnetic circuit. The data obtained are reproduced in Fig. 1, where Professor Moullin shows a curve representing a. c. current input for different air gaps, given that the voltage supplied is constant. In the same figure, Moullin presents the theoretical current that would need to be applied to sustain the same voltage, and so the related pole forces across the air gap, assuming (a) no flux leakage and (b) that there is complete equality between inductive energy input and the mechanical energy potential for the magnetization that is established in the air gap in a quarter-cycle period at the a. c. power excitation frequency.

The data show that, even though the level of magnetic polarization is well below the saturation value, being confined to a range that is regarded as the linear permeability range in transformer design, there is a clear drop-off of current, and so the volt-amp reactive power input needed, as

current increases, compared with that predicted by the mechanical potential built up in the air gaps.

Unless leakage flux is excessive, here was clear evidence of anomalous energy activity.

Moullin discusses the leakage flux inferred by this experiment but points out that there is considerable mystery in why the effect of a small gap, which should certainly not result in much flux leakage in the gap region, nevertheless has an enormous effect in causing what has to be substantial leakage in the light of the energy discrepancy.

Moullin did not contemplate that energy had been fed in from the zero-point field system and so he left the issue with the statement that it was virtually impossible to predict leakage flux by calculation.

He was, of course, aware of magnetic domain structure and his argument was that the leakage flux problem was connected with what he termed a 'yawing' action of the flux as it passes around the magnetic circuit. Normally, provided the level of polarization is below the knee of the B-H curve, which occurs at about 70% of saturation in iron cores of general crystal composition, it requires very little magnetizing field to change the magnetic flux density. This is assuming that every effort is made to avoid air gaps. The action involves domain wall movements so that the magnetic states of adjacent domains switch to different crystal axes of easy magnetization and this involves very little energy change.

However, if there is an air gap ahead in the flux circuit and the magnetizing winding is not sitting on that air gap, the iron core itself has to be the seat of a progressive field source linking the winding and the gap. It can only serve in that sense by virtue of the lines of flux in the domains being forced to rotate somewhat from the preferred easy axes of magnetization, with the help of the boundary surfaces around the whole core. This action means that, forcibly, and consequential upon the existence of the air gap, the flux must be carried through the core by that 'yawing' action. It means that substantial energy is needed to force the establishment of those fields within the iron core. More important, however, from the point of view of this invention, it means that the intrinsic magnetic polarization effects in adjacent magnetic domains in the iron cease to be mutually parallel or orthogonal so as to stay directed along axes of easy magnetization. Then, in effect, the magnetizing action is not just that of the magnetizing winding wrapped around the core but becomes also that of adjacent ferromagnetic polarization as the latter act in concert as vacuum-energy powered solenoids and are deflected into one another to develop the additional forward magnetomotive forces.

The consequences of this are that the intrinsic ferromagnetic power source with its thermodynamic ordering action contributes to doing work in building up forces across the air gap. The task, in technological terms, is then to harness that energy as the gap is closed, as by poles coming together in a reluctance motor, and avoid returning that energy as the poles separate, this being possible if the controlling source of primary magnetization is well removed from the pole gap and the demagnetization occurs when the poles are at the closest position.

This energy situation is evident in the Moullin data, because the constant a. c. voltage implies a constant flux amplitude across the air gap if there is no flux leakage in the gap region. A constant flux amplitude implies a constant force between the poles and so the gap width in relation to this force is a measure of the mechanical energy potential of the air gap. The reactive volt-amp power

assessment over the quarter-cycle period representing the polarization demand can then be compared with the mechanical energy so made available. As already stated, this is how Moullin deduced the theoretical current curve. In fact, as his data show, he needed less current than the mechanical energy suggested and so he had in his experiment evidence of the vacuum energy source that passed unnoticed and is only now revealing itself in machines that can serve our energy needs.

In the research leading to this patent application the Moullin experiment has been repeated to verify a condition where a single magnetizing winding serves three air gaps. The Moullin test configuration is shown in Fig. 2, but in repeating the experiment in the research leading to this invention, a search coil was mounted on the bridging member and this was used to compare the ratio of the voltage applied to the magnetizing winding and that induced in the search coil. The same fall-off feature in current demand was observed, and there was clear evidence of substantial excess energy in the air gap. This was in addition to the inductive energy that necessarily had to be locked into the magnetic core to sustain the 'yawing' action of the magnetic flux already mentioned.

It is therefore emphasized that, in priming the flux 'yawing' action, energy is stored inductively in the magnetic core, even though this has been deemed to be the energy of flux leakage outside the core. The air gap energy is also induction energy. Both energies are returned to the source winding when the system is demagnetized, given a fixed air gap. If, however, the air gap closes after or during magnetization, much of that inductive energy goes into the mechanical work output. Note then that the energy released as mechanical work is not just that stored in the air gap but is that stored in sustaining the 'yaw'. Here, then is reason to expect an even stronger contribution to the dynamic machine performance, one that was not embraced by the calculation of the steady-state situation.

Given the above explanation of the energy source, the structural features which are the subject of this invention will now be described.

The 'yawing' action is depicted in Fig. 3, which depicts how magnetic flux navigates a right-angled bend in a magnetic core upon passage through an air gap. By over-simplification it is assumed that the core has a crystal structure that has a preferred axis of magnetization along the broken line path. With no air gap, the current needed by a magnetizing winding has only to provide enough magnetomotive force to overcome the effects of non-magnetic inclusions and impurities in the core substance and very high magnetic permeabilities can apply. However, as soon as the air gap develops, this core substance has to find a way of setting up magnetomotive force in regions extending away from the locality of the magnetizing winding. It cannot do this unless its effect is so powerful that the magnetic flux throughout the magnetic circuit through the core substance is everywhere deflected from alignment with a preferred easy axis of magnetization. Hence the flux vectors depicted by the arrows move out of alignment with the broken line shown.

There is a 'knock-on' effect progressing all the way around the core from the seat of the magnetizing winding and, as already stated, this harnesses the intrinsic ferromagnetic power that, in a system with no air gap, could only be affected by magnetization above the knee of the B-H curve. Magnetic flux rotation occurs above that knee, whereas in an ideal core the magnetism develops with very high permeability over a range up to that knee, because it needs very little power to displace a magnetic domain wall sideways and promote a 90°(Degree) or a 180°(Degree) flux reversal. Indeed, one can have a magnetic permeability of 10,000 below the knee and 100 above the knee, the latter reducing progressively until the substance saturates magnetically.

In the situation depicted in Figs 2 or 3 the field strength developed by the magnetizing windings 1 on magnetic core 2 has to be higher, the greater the air gap, in order to achieve the same amount of magnetization as measured by the voltage induced in a winding (not shown) on the bridging member 3. However, by virtue of that air gap there is potential for harnessing energy supplied to that air gap by the intrinsic zero-point field that accounts for the magnetic permeability being over unity and here one can contemplate very substantial excess energy potential, give incorporation in a machine design which departs from convention.

One of the applicants has built an operative test machine which is configured as depicted schematically in Fig. 4. The machine has been proved to deliver substantially more mechanical power output than is supplied as electrical input, as much as a ratio of 7:1 in one version, anc it can act regeneratively to produce electrical power.

What is shown in Fig. 4 is a simple model designed to demonstrate the principle of operation. It comprises a rotor in which four permanent magnets 4 are arrayed to form four poles. The magnets are bonded into four sectors of a non-magnetic disc 5 using a high density polyurethane foam filler and the composite disc is then assembled on a brass spindle 6between a split flange coupling. Not shown in the figure is the structure holding the spindle vertically in bearings or the star wheel commutator assembly attached to the upper shaft of the spindle.

Note that the magnets present north poles at the perimeter of the rotor disc and that the south poles are held together by being fimly set in the bonding material.

A series of four stator poles were formed using magnetic cores from standard electromagnetic relays are were positioned around the rotor disc as shown. The magnetizing windings 7 on these cores are shown to be connected in series and powered through commutator contacts 8 by a d. c. power supply. Two further stator cores formed by similar electromagnetic relay components are depicted by their windings 9 in the intermediate angle positions shown and these are connected in series and connected to a rectifier 10 bridged by a capacitor 11.

The rotor spindle 6 is coupled with a mechanical drive (not shown) which harnesses the torque developed by the motor thus formed and serves as a means for measuring output mechanical power delivered by the machine.

In operation, assuming that the rotor poles are held initially off-register with the corresponding stator poles and the hold is then released, the strong magnetic field action of the permanent magnets will turn the rotor to bring the stator and rotor poles into register. A permanent magnet has a strong attraction for soft iron and so this initial impulse of rotation is powered by the potential energy of the magnets.

Now, with the rotor acting as a flywheel and having inertia it will have a tendency to over-shoot the in-register pole position and that will involve a reverse attraction with the result that the rotor will oscillate until damping action brings it to rest. However, if the contacts of the commutating switch are closed as the poles come first into register, the magnetizing windings 7 will receive a current pulse which, assuming the windings are connected in the right sense, tends to demagnetize the four stator cores. This means that, as the stator and rotor poles separate, the reverse attraction by the

magnets is eliminated. Indeed, if the demagnetizing current pulses supplied to the windings 4 are strong enough, the stator poles can reverse polarity and that results in a repulsion giving forward drive to the separating rotor poles.

The net result of this action is that the rotor will continue rotating until it passes the dead centre angular position which allows the rotor to be attracted in the forward direction by the stator poles 90°(Degree) forward of those acting originally.

The commutating switch 8 needs only to be closed for a limited period of angular travel following the top dead centre in-register position of the stator and rotor poles. The power supplied through that switch by those pulses will cause the rotor to continue rotating and high speeds will be achieved as the machine develops its full motor function.

Tests on such a machine have shown that more mechanical power can be delivered than is supplied electrically by the source powering the action through the commutating switch. The reason for this is that, whereas the energy in the air gap between rotor and stator poles which is tapped mechanically as the poles come into register is provided by the intrinsic power of the ferromagnet, a demagnetizing winding on the part of the core system coupled across that air gap needs very little power to eliminate the mechanical force acting across that air gap. Imagine such a winding on the bridging member shown in Fig. 2. The action of current in that winding, which sits astride the 'yawing' flux in that bridging member well removed from the source action of the magnetizing windings 1, is placed to be extremely effective in resisting the magnetizing influence communicated from a distance. Hence very little power is needed to overcome the magnetic coupling transmitted across the air gap.

Although the mutual inductance between two spaced-apart magnetizing windings has a reciprocal action, regardless of which winding is primary and which is secondary, the action in the particular machine situation being described involves the 'solenoidal' contribution represented by the 'yawing' ferromagnetic flux action. The latter is not reciprocal inasmuch as the flux 'yaw' depends on the geometry of the system. A magnetizing winding directing flux directly across an air gap has a different influence on the action in the ferromagnetic core from one directing flux lateral to the air gap and there is no reciprocity in this action.

In any event, the facts of experiment do reveal that, owing to a significant discrepancy in such mutual interaction, more mechanical power is fed into the rotor than is supplied as input from the electrical source.

This has been further demonstrated by using the two stator windings 9 to respond in a generator sense to the passage of the rotor poles. An electrical pulse is induced in each winding by the passsage of a rotor pole and this is powered by the inertia of the rotor disc 5. By connecting the power so generated to charge the capacitor 11 the d. c. power supply can be augmented to enhance the efficiency even further. Indeed, the machine is able to demonstrate the excess power delivery from the ferromagnetic system by virtue of electrical power generation charging a battery at a greater rate than a supply battery is discharged.

This invention is concerned with a practical embodiment of the motor-generator principles just described and aims, in its preferred aspect, to provide a robust and reliable machine in which the

tooth stresses in the rotor poles, which are fluctuating stresses communicating high reluctance drive torque, are not absorbed by a ceramic permanent magnet liable to rupture owing to its brittle composition.

Another object is to provide a structure which can be dismantled and reassembled easily to replace the permanent magnets, but an even more important object is that of minimizing the stray leakage flux oscillations from the powerful permanent magnets. Their rotation in the device depicted in Fig. 4 would cause excessive eddy-current induction in nearby metal, including that of the machine itself, and such effects are minimized if the flux changes are confined to paths through steel laminations and if the source flux from the magnets has a symmetry or near symmetry about the axis of rotation.

Thus, the ideal design with this in mind is one where the permanent magnet is a hollow cylinder located on a non-magnetic rotor shaft, but, though that structure is within the scope of this invention, the machine described will utilize several separate permanent magnets approximating, in function, such a cylindrical configuration.

Referring to Fig. 4, it will further be noted that the magnetic flux emerging from the north poles will have to find its way along leakage paths through air to re-enter the south poles. For periods in each cycle of machine operation the flux will be attracted through the stator cores, but the passage through air is essential and so the power of the magnets is not used to full advantage and there are those unwanted eddy-current effects.

To overcome this problem the invention provides for two separate rotor sections and the stator poles become bridging members, which with optimum design, allow the flux from the magnets to find a route around a magnetic circuit with minimal leakage through air as the flux is directed through one or other pairs of air gaps where the torque action is developed.

Reference is now made to Fig. 5 and the sequence of rotor positions shown. Note that the stator pole width can be significantly smaller that that of the rotor poles. Indeed, for operation using the principles of this invention, it is advantageous for the stator to have a much smaller pole width so as to concentrate the effective pole region. A stator pole width of half that of the rotor is appropriate but it may be even smaller and this has the secondary advantage of requiring smaller magnetizing windings and so saving on the loss associated with the current circuit.

The stator has eight pole pieces formed as bridging members 12, more clearly represented in Fig. 7, which shows a sectional side view through two rotor sections 13 axially spaced on a rotor shaft 14. There are four permanent magnets 15 positioned between these rotor sections and located in apertures 16 in a disc 17 of a non-magnetic substance of high tensile strength, the latter being shown in Fig. 6. The rotor sections are formed from disc laminations of electrical steel which has seven large teeth, the salient poles. Magnetizing windings 18 mounted on the bridging members 12 constitute the system governing the action of the motor-generator being described.

The control circuitry is not described as design of such circuitry involves ordinary skill possessed by those involved in the electrical engineering art.

It suffices, therefore, to describe the merits of the structural design configuration of the core elements of the machine. These concern principally the magnetic action and, as can be imagined

from Fig. 7, the magnetic flux from the magnets enters the rotor laminations by traversing the planar faces of the laminations and being deflected into the plane of the laminations to pass through one or other of the stator pole bridging members, returning by a similar route through the other rotor.

By using eight stator poles and seven rotor poles, the latter having a pole width equal to half the pole pitch in an angular sense, it will be seen from Fig. 5, that there is always a flux passage across the small air gap between stator and rotor poles. However, as one pole combination is in-register the diametrically-opposed pole combinations are out-of-register.

As described by reference to Fig. 4 the operation of the machine involves allowing the magnet to pull stator and rotor poles into register and then, as they separate, pulsing the winding on the relevant stator member to demagnetize that member. In the Fig. 4 system, all the stator magnetizing windings were pulsed together, which is not an optimum way in which to drive a multi-pole machine.

In the machine having the pole structure with one less rotor pole than stator poles (or an equivalent design in which there is one less stator pole than rotor poles) this pulsing action can be distributed in its demand on the power supply, and though this makes the commutation switch cicuit more expensive the resulting benefit outweighs that cost.

However, there is a feature of this invention by which that problem 15 can be alleviated if not eliminated.

Suppose that the rotor has the position shown in Fig. 5(a) with the rotor pole denoted R1 midway between stator poles S1 and S2 imagine that this is attracted towards the in-register position with stator pole S2. Upon reaching that in-register position, as shown in Fig. 5 (c), suppose that the magnetizing winding of stator pole S2 is excited by a current pulse which is sustained until the rotor reaches the Fig. 5(e) position. The combination of these two actions will have imparted a forward drive impulse powered by the permanent magnet in the rotor structure and the current pulse which suppresses braking action will have drawn a smaller amount of energy from the electrical power source that supplies it. This is the same process as was described by reference to Fig. 4.

However, now consider the events occurring in the rotor action diametrically opposite that just described. In the Fig 5(a) position rotor pole R4 has come fully into register with stator pole S5 and so stator pole S5 is ready to be demagnetized. However, the magnetic coupling between the rotor and stator poles is then at its strongest. Note, however, that in that Fig. 5(a) position R5 is beginning its separation from stator pole S6and the magnetizing winding of stator pole S6 must then begin draw power to initiate demagnetization. During that following period of pole separation the power from the magnet is pulling R1 and S2 together with much more action than is needed to generate that current pulse needed to demagnetize S6. It follows, therefore, that, based on the research findings of the regenerative excitation in the test system of Fig. 4, the series connection of the magnetizing windings on stators S2 and S6 will, without needing any commutative switching, provide the regenerative power needed for machine operation.

The complementary action of the two magnetizing windings during the pole closure and pole separation allows the construction of a machine which, given that the zero-point vacuum energy powering the ferromagnet is feeding input power, will run on that source of energy and thereby cool

the sustaining field system.

There are various design options in implementing what has just been proposed. Much depends upon the intended use of the machine. If it is intended to deliver mechanical power output the regenerative electrical power action can all be used to power the demagnetization with any surplus contributing to a stronger drive torque by reversing the polarity of the stator poles during pole separation.

If the object is to generate electricity by operating in generator mode then one could design a machine having additional windings on the stator for delivering electrical power output. However, it seems preferable to regard the machine as a motor and maximize its efficiency in that capacity whilst using a mechanical coupling to an alternator of conventional design for the electrical power generation function. In the latter case it would still seem preferable to use the self-excitation feature already described to reduce commutation switching problems.

The question of providing for machine start-up can be addressed by using a separate starter motor powered from an external supply or by providing for current pulsing limited to, say, two stator poles. Thus, for example, with the eight stator pole configuration, the cross-connected magnetizing windings could be limited to three stator pairs, with two stator magnetizing windings left free for connection to a pulsed external supply source.

If the latter feature were not required, then the stator magnetizing windings would all be connected in pairs on a truly diametrically opposite basis. Thus Fig. 8 shows a rotor-stator configuration having six stator poles interacting with seven rotor poles and stator magnetizing windings linked together in pairs.

The invention, therefore, offers a wide range of implementation possibilities, which, in the light of this disclosure will become obvious to persons skilled in the electrical engineering art, all based, however, on the essential but simple principle that a rotor has a set of poles of common polarity which are attracted into register with a set of stator poles that are suppressed or reversed in polarity magnetically during pole separation. The invention, however, also offers the important feature of minimizing commutation and providing further for a magnetic flux closure that minimizes the leakage flux and fluctuations of leakage flux and so contributes to efficiency and high torque performance as well as durability and reliability of a machine incorporating the invention.

It is noted that although a machine has been described which uses two rotor sections it is possible to build a composite version of the machine having several rotor sections. In the eventuality that the invention finds use in very large motor-generator machines the problem of providing very large magnets can be overcome by a design in which numerous small magnets are assembled. The structural concept described by reference to Fig. 6 in providing locating apertures to house the magnets makes this proposal highly feasible. Furthermore, it is possible to replace the magnets by a steel cylinder and provide a solenoid as part of the stator structure and located between the rotor sections. This would set up an axial magnetic field magnetizing the steel cylinder and so polarizing the rotor. However, the power supplied to that solenoid would detract from the power generated and so such a machine would not be as effective as the use of permanent magnets such as are now available. Nevertheless, should one see significant progress in the development of warm superconductor materials, it may become feasible to harness the self-generating motor-generator

features of the invention, with its selfcooling properties, by operating the device in an enclosure at low temperatures and replacing the magnets by a superconductive statorsupported solenoid.

Claims ~

(1) An electrodynamic motor-generator machine comprising a stator configured to provide a set of stator poles, a corresponding set of magnetizing windings mounted on the stator pole set, a rotor having two sections each of which has a set of salient pole pieces, the rotor sections being axially spaced along the axis of rotation of the rotor, rotor magnetization means disposed between the two rotor sections arranged to produce a unidirectional magnetic field which magnetically polarizes the rotor poles, whereby the pole faces of one rotor section all have a north polarity and the pole faces of the other rotor section all have a south polarity and electric circuit connections between an electric current source and the stator magnetizing windings arranged to regulate the operation of the machine by admitting current pulses for a duration determined according to the angular position of the rotor, which pulses have a direction tending to oppose the polarization induced in the stator by the rotor polarization as stator and rotor poles separate from an in-register position, whereby the action of the rotor magnetization means provides a reluctance motor drive force to bring stator and rotor poles into register and the action of the stator magnetization windings opposes the counterpart reluctance braking effect as the poles separate.

(2) A motor-generator according to claim 1, wherein the circuit connecting the electric current source and the stator magnetizing windings is designed to deliver current pulses which are of sufficient strength and duration to provide demagnetization of the stator poles as the stator and rotor poles separate from an in-register position.

(3) A motor-generator according to claim 1, wherein the circuit connecting the electric current source and the stator magnetizing windings is designed to deliver current pulses which are of sufficient strength and duration to provide a reversal of magnetic flux direction in the stator poles as the stator and rotor poles separate from an in-register position, whereby to draw on power supplied from the electric current source to provide additional forward drive torque.

(4) A motor-generator according to claim 1, wherein the electric current source connected to a stator magnetizing winding of a first stator pole comprises, at least partially, the electrical pulses induced in the stator magnetizing winding of a different second stator pole, the stator pole set configuration in relation to the rotor pole set configuration being such that the first stator pole is coming into register with a rotor pole as the second stator pole separates from its in-register position with a rotor pole.

(5) A motor-generator according to claim 1, wherein the number of poles in a set of stator poles is different from the number of rotor poles in each rotor section.

(6) A motor-generator according to claim I, wherein the stator configuration provides pole pieces which are common to both rotor sections in the sense that when stator and rotor poles are in-register the stator pole pieces constitute bridging members for magnetic flux closure in a magnetic circuit including that of the rotor magnetization means disposed between the two rotor sections.

(7) A motor-generator according to claim 6, wherein the number of poles in a set of stator poles

and the number of rotor poles in each section do not share a common integer factor and the number of rotor poles in one rotor section is the same as that in the other rotor section.

(8) A motor-generator according to claim 7, wherein the number of poles in a stator set and the number of poles in a rotor section differs by one and the pole faces are of sufficient angular width to assure that the magnetic flux produced by the rotor magnetization means can find a circuital magnetic flux closure route through the bridging path of a stator pole and through corresponding rotor poles for any angular position of the rotor.

(9) A motor-generator according to claim 8, wherein each rotor section comprises seven poles.

(10) A motor-generator according to claim 7, wherein there are N rotor poles in each rotor section and each has an angular width that is 180/N degree of angle.

(11) A motor-generator according to claim 7, wherein the stator pole faces have an angular width that is no greater than half the angular width of a rotor pole.

(12) A motor-generator according to claim 1, wherein the rotor sections comprise circular steel laminations in which the rotor poles are formed as large teeth at the perimeter, and the rotor magnetization means comprise a magnetic core structure the end faces of which abut two assemblies of 20 such laminations forming the two rotor sections.

(13) A motor-generator according to claim 1 in which the rotor magnetization means comprises at least one permanent magnet located with its polarization axis parallel with the rotor axis.

(14) A motor-generator according to claim 13, wherein an apertured metal disc that is of a non-magnetizable substance is mounted on a rotor shaft and positioned intermediate the two rotor sections and each aperture provides location for a permanent magnet, whereby the centrifugal forces acting on the permanent magnet as the rotor rotates are absorbed by the stresses set up in the disc.

(15) A motor-generator according to claim 1, having a rotor mounted on a shaft that is of a non-magnetizable substance, whereby to minimize 5 magnetic leakage from the rotor magnetizing means.

(16) An electrodynamic motor-generator machine comprising a stator configured to provide a set of stator poles, a corresponding set of magnetizing windings mounted on the stator pole set, a rotor having two sections each of which has a set of salient pole pieces, the rotor sections being axially spaced along the axis of rotation of the rotor, rotor magnetization means incorporated in the rotor structure and arranged to polarize the rotor poles, whereby the pole faces of one rotor section all have a north polarity and the pole faces of the other rotor section all have a south polarity and electric circuit connections between an electric current source and the stator magnetizing windings arranged to regulate the operation of the machine by admitting current pulses for a duration determined according to the angular position of the rotor, which pulses have a direction tending to oppose the polarization induced in the stator by the rotor polarization as stator and rotor poles separate from an in-register position, whereby the action of the rotor magnetization means provides a reluctance motor drive force to bring stator and rotor poles into register and the action of the stator magnetization windings opposes the counterpart reluctance braking effect as the poles

separate.

(17) A motor- generator according to claim 16, wherein the electric current source connected to a stator magnetizing winding of a first stator pole comprises, at least partially, the electrical pulses induced in the stator magnetizing winding of a different second stator pole, the stator pole set configuration in relation to the rotor pole set configuration being such that the first stator pole is coming into register with a rotor pole as the second stator pole separates from its in-register position with a rotor pole.

Amendments to the Claims:

(1) An electrodynamic motor-generator machine comprising a stator configured to provide a set of stator poles, a corresponding set of magnetizing windings mounted on the stator pole set, a rotor having two sections each of which has a set of salient pole pieces, the rotor sections being axially spaced along the axis of rotation of the rotor, rotor magnetization means disposed between the two rotor sections arranged to produce a unidirectional magnetic field which magnetically polarizes the rotor poles, whereby the pole faces of one rotor section all have a north polarity and the pole faces of the other rotor section all have a south polarity and electric circuit connections between an electric current source and the stator magnetizing windings arranged to regulate the operation of the machine by admitting current pulses for a duration determined according to the angular position of the rotor, which pulses have a direction tending to oppose the polarization induced in the stator by the rotor polarization as stator and rotor poles separate from an in-register position, whereby the action of the rotor magnetization means provides a reluctance motor drive force to bring stator and rotor poles into register and the action of the stator magnetization windings opposes the counterpart reluctance braking effect as the poles separate, the machine being characterized in that the stator comprises separate ferromagnetic bridging members mounted parallel with the rotor axis, the ends of which constitute stator poles and the core sect ions of which provide cross-section disposed antiparallel with the unidirectional magnetic field polarization axis of the rotor magnetizing means.

(2) A motor-generator according to claim 1, wherein the circuit connecting the electric current source and the stator magnetizing windinga is designed to deliver current pulses which are of sufficient strength and duration to provide demagnetization of the stator poles as the stator and rotor poles separate from an in-register position.

(3) A motor-generator according to claim 1, wherein the circuit connecting the electric current source and the stator magnetizing windings is designed to deliver current pulses which are of sufficient strength and duration to provide a reversal of magnetic flux direction in the stator poles as the stator and rotor poles separate from an in- register position, whereby to draw on power supplied from the electric current source to provide additional forward drive torque.

(4) A motor-generator according to claim 1, wherein the electric current source connected to a stator magnetizing winding of a first stator pole comprises, at least partially, the electrical pulses induced in the stator magnetizing winding of a different second etator pole, the stator pole set configuration in relation to the rotor pole set configuration being such that the first stator pole is coming into register with a rotor pole as the second stator pole separates from its in-register position with a rotor pole.

(5) A motor-generator according to claim 1, wherein the number of poles in a set of atator poles is different from the number of rotor poles in each rotor section.

(6) A motor-generator according to claim 1, wherein the stator configuration provides pole pieces which are common to both rotor sections in the sense that when stator and rotor poles are in-register the stator pole pieces constitute bridging members for magnetic flux closure in a magnetic circuit including that of the rotor magnetization means disposed between the two rotor sections.

(7) A motor-generator according to claim 6, wherein the number of poles in a set of stator poles and the number of rotor poles in each section do not share a common integer factor and the number of rotor poles in one rotor section is the same as that in the other rotor section.

Search Examiner: J. COCKITT

Categories of documents:
X: Document indicating lack of novelty or of inventive step.
A: Document indicating technological background and/or state of the art.

Category Identity of document and relevant passages Relevant to claim(s):
 X GB 0547668 A (HITCHCOCK) see page 6 lines 54 to 71; Figures 6, 7 1-3, 6, 12-14, 16 at least
X US 4972112 A (KIM) see whole document 1-3 at least
A US 4873463 A (JONES)

Revelation of the Myths of "Unity" & Beyond

Over 5 years ago I made a reference in a chapter of my book 'The Revelation of the Century' in relation to claims on "over 100% efficiency". In this book, which is still being distributed worldwide by Nexus Magazine, Publisher of Queensland, Australia, reference is made to what is erroneously termed "zero point" or "beyond unity". On page 14, second to last paragraph, I quoted:

I do not subscribe to the definition of 'beyond unity'. There simply cannot be any such state, as the totality of the Universe is 'Unity'.

In support of my reference, I have now expanded upon this matter in this new Second Edition 2001. Now I am going to discuss this subject in more depth, and my revelations here will no doubt shatter the minds of many electrical engineers and scientists worldwide, because they have got it all wrong!

To start with, in orthodox teachings, we have the word "efficiency" used extensively in relation to electrical machines and devices, etc. So too, we now have the definition of 'over 100% efficiency' bandied around extensively. Now, this term 'efficiency', insofar as orthodox teachings are concerned, applies only to calculations to 100% and beyond. Now that most of the scientific world are now beginning to accept the possibility of 'over 100% efficiency', this, in turn, has now also spilled over into using the terms of 'unity', 'beyond unity', 'negative energy', 'zero point', etc. These terms do not necessarily apply because here, in fact, is just where reality comes into the act. For

instance, if we have a machine or device displaying an input of 100 watts and an output of 500 watts, this equals 500%. This is so, but it only indicates the degree of performance calculated at the end of the day. The shattering truth of the matter is that the device is not necessarily operating in the realm of 'unity', let alone over unity, zero point, negative time, etc. However, a machine or device that "measures" over 100% and displays energy "growth" effects, with "time", which are "additive" and "accumulative", then this is "not" conventional science, but science of another dimension - this is UNITY! So, therefore, a machine or device which does not display the aforegoing effects, is not a unity or over unity device, as is too often claimed. This kind of evidence outlined above is, in my knowledge of science, the "only" method by which the violation of the Law of Conservation can be proven. Ever expanding energy, akin to the now proven and accepted evidence of the Expansion of the Universe.

On The Matter of Excess Heat Manifestation

The permanent magnet rotor of the Adams Machine is of the only type of its kind in the world and, due to its unusual materials and their geometric placements, the rotor of the Adams Machine remains cool and, at most, rises only three to five degrees Celsius above ambient under full load! The rare earth magnets of the rotor are therefore protected from destruction due to excessive heat which would be inevitable in a very short period of time in a, for instance, large version of the Faraday Machine, and others I could mention. Faraday was brilliant in that he well knew the disadvantages and problems to be faced in attempting to put the discovery of this puny quantity of energy to work, by simply discarding it as a useless oddity, where it should have remained. Time has proven that hundreds of people worldwide have attempted to construct a viable Faraday machine and have all failed to prove excess energy presence, except for Tewari and Inomatu, who still have the problem of harnessing the high current efficiently without the use of lethal Mercury and the dispersement of excessive heat manifesting within the machine rotor.

The Energy Metamorphosis

It is my confirmed opinion that we are now into a major revolution in science and technology. New systems are almost a daily occurrence, major breakthroughs are coming on stream at a very fast pace and on a regular basis. Such are some of the breakthroughs that their effects on our civilisation will defy description. Superluminal energy production that is clean, economical and safer is now here.

The sooner people learn that the genius of man is, in reality, the genius of our Creator and it is unlimited, the better it will be for mankind. To believe otherwise is to state that our Creator's genius is limited. Our Creator's genius is not limited - it is the false teachings of physics bandied out by the mind of man in our Universities and Colleges alike that is limited. The laws of physics, as they stand today, are little but convenient assumptions ("if it works, leave it alone" kind of thinking), where true science (progressive science) abides by the Laws of Nature. This is why we humans are fully capable of applying the Laws of Nature to physics in our new dimension of thought, but still appear reluctant to deprogram when it comes to the orthodox and almost religious dogmas of past and sacrosanct principles of man-made scientific notions. Our Universe is negentropically organised and

I:/Data_PC_CHR/.../adamotor.htm   38/77

is proceeding transfinitely from disorder to order. It was until recent times it was accepted wisdom that the sun revolved around the earth and your life depended upon believing it!

Nexus Magazine (August-September 1993)

The Adams Pulsed Electric Motor Generator --- Update

Robert Adams of New Zealand Outlines Magnetic Polarity Reversal & His Discoveries

As the inventor of the `Adams Bulsed Electric Motor Generator', I write this treatise with a view to keeping it uncluttered from unnecessary thcories and mathematics, so that all who read this article, whether they be enthusiasts, engineers or scientists, are able to follow the text, together with its drawings, describing the sequences in various stages of operation of the `Adams Advanced PEMG'.

My various discoveries cover over twenty-five years in the fields of electrical rotary machines, with a total of over sixty years involvement in communications, broacasting and electrical engineering.

It is my desire that as many free energy enthusiasts as possible get into the act of building my original machine whilst, at the same time, conducting their own research. Several people in different countries have already succeeded in building the machine in its original form, as has been outlined in the "Adams Manual", with beyond-unity results. After obtaining satisfying results from the original version, one would then be better equipped to handle the more stringent requirements of the 'Advanced', or 'Mark II' version. A lot of material in this treatise pertains to this 'Mark II' version, i.e., the 'Adams Advanced Motor Generator'.

Losses In Electrical Machines ~

Losses in conventional electrical machines are too high and are due to magnetic drag, eddy currents and hysterisis, and consequent high operating temperatures.

It was with the above problerms in mind that I was prompted to fid a way of overcoming the aforementioned losses, the result of which evolved in a machine of beyond-unity capabilities.

As the `Adanis Motor' is a pulsed direct-current device, there is no change in polarity of the external source; therefore there are no eddy current losses, and hysterisis loss in the motor is minuscule; with new matials becoming available for stators, the small loss incurred would disapear. It matters little, however, as the machine efficiency is such that such a minuscule loss is negligible.

With reference to magnetic drag, this too is virtually non-existent, due to the unique design of the machine. A rotor pole, upon leaving the attraction area of the stator, is at a precise geometrical point - and is suddenly repulsed, thus overcoming any possibility of magnetic drag taking place.

Having outlined the above, I will now explain something regarding magnetic drag that won't be found in classical teachings or texts: a rotor, once in motion, is mutually attracted to any stator in its

path. On leaving the stator area, however, the stator causes a drag-back effect - classical teachings do tell you that much. What classical teaching does not tell you is that the energy in the initial attraction equals exactly that which causes the drag upon leaving the stator area. This is where classical teaching is found wanting. The original attraction and secondary attraction exactly cancel one another out. Magnetic drag, therefore, does not exist in the straight motor version of the `Adams Motor' invention. The machine is pulsed before the trailing edge of the rotor magnet can be affected. Should the timing be a littie out, the effect would be minuscule.

Having discussed the aforementioned factors, there is littie to explain regarding the very low operating temperature of the `Adams Motor', as a result of which it does not require the use of a cooling fan with its own efficiency loss to counter.

It has been noted in New Energy News under the title "High Current Brushes", on making use of silver and platinum for commutator and points: this news is not news to me as, during my research in 1976,1 used these materials myself for the above purpose. It appears, however, from this article submitted to New Energy News that the method for their use, being researched, has good prospects. I, for one, look forward to learning of the progress in this direction.

In 1976 I learnt of the high losses of my commutator system and first used silver for the star disc and platinum for the points with considerable success, and having since used photo and magnetic switching with remarkable success. Having, of course, kept my research and experimentation to myself over the past two decades for reasons associatetl in the main with the establishment, and latterly with interationall patent law, I was forced to withhold all my machine's secrets up until my recent decision to publish certain aspects of my work earlier this year.

Recent Discovery by the Author ~

One would expect magnetic polarity reversal to be instantaneous in a rotary machine between rotor magnet and stator. However, this is not so. I have recently discovered that the reversal is exponential in tnansition from one polarity to another. When this occurs, the magnetic radiation of the rotor pole/s doubles and, with no external power aIplied, there is no magnetism in the stator pole - so it becomes patently logical that the extra energy can only be from the ether (negative-time-nergy).

Engineering Into Negative Time & Negative Energy ~

In the realms of engineering negative energy and negative time, I have anticipated there would be a new world of discoveries at hand and answers to be found to certain phenomna taking place, to which we have all previously been unaccustomed. This anticipation has manifested itself all too soon as, since my first successfull recent attempts at engineering anti-gravity have proven, some interesting phenomena have become revealed, one of which is the process of magnetic polarity reversal, or conversion.

In an endeavour to discover what actually takes place during this 'conversion' of magnetic polarity, I used a magnetic polarity indicator and compass, but both proved worthless, as they simply hunted back and forth due to the pulses of magnetic fields from the machine being in motion.

Subsequent to this attempt, I had meanwhile mude an important discovery concerning magnetic polarity reversal, in that it was not necessary that the machihe he in motion or apply any external energy in oreder for it to bring about the magnetic polarity reversal. From this discovery, I became confident that I further discovered what actually takes place in this region in relation to the reversal phenomenon. In order to implement a test on this, I determined that a slow movement of the rotor by hand would indicate, on the instruments, what would he taking place. This exercise did indeed prove to be of substance, and I will now, here, graphically portray the results.

To deliver power, however, from the negative energy/negative time region, the machine must be in motion and, preferably, operating at certain harmonic speeds. The accompanying drawings give a physical description of the magnetic actions taking place as the rotor magnet reaches the stator and commenes to traverse though the negative energy/negative time region.

In a 180 degree configuration, with two stator poles, the same actions take place simultaneously in reverse magnetic polarity order (as Drawing TD-GOOl, Figure 2, pointers A and B indicate).

Actions Taking Place in the Adams Advanced (Mark II) Motor Generator ~

(1) A rotor south pole, upon approaching an open cincuit stator, is mutually attracted to it, as depicted by Drawing TD-G004, Figure A. [*These figures are missing*]

(2) When the leading edge of a south pole reaches the edge of a stator (Figure B), it appears, as it begins to move inwards, that the south polarity of the rotor pole is being exponentially reversed to north. In addition, the stator now becomes a temporary magnet, also exponentially becorning a north pole (Figure C). Meanwhile, the rotor magnet is still being attracted up to point zero of the stator (Figure D) and, as the leading edge of the rotor moves from point zero of the stator second-half region (Figure E), it appears that the north polarity strength is now increasing exponentially in this region and, on becoming parallel, i.e. reaching each other face-to-face (Figure F), the magetic polarity reversal is then complete, and both magnet and stator poles are at north polarity. lt is in this region now that the state of and-gravity and negative time exists, with two magnets of like poles attracting each other and creating a gravitational repulsive force at the completion of the magnetic polarity reversal cycle.

There is a specific point of `x' from the stator centre where the machine is pulsed (refer Drawing TD-G001, Figure 1, A & B, pulse angle). Fine tuning the timing at this geometrical point, the machine passes into a state of electromotive resonance where input power drops dramatically and shaft power increases in the negative time and negative energy region.

In all, the machine benefits from four different force actions per revolution and paying a minuscule toll fee for only one.

Firstly, as depicted by Figure A of Drawing TD-G004, the rotor magnet is mutually attracted to the stator (gets away without paying for that - explained elsewhere - refer paragraph 4 in section headed 'Losses in Electrical Machines'). Secondly, the attraction of the gravitational repulsion forces in the anti- gravity area (as illustrated in Drawing TD-G001, Figure 2, at arrows A & B). Thirdly, from the repulsion pulse of the stator at point `x' (refer to pulse angle of Drawing TD-G001, Figure 1).

Fourthly, the rotor is given a further pulse from the collapsing field (a few degrees from potra `x' in Figure 1).

For maximum possible results from the `Adams Advanced (Mark II) Motor', it is necessary to apply harmonic/resonance equations for the calculation of all parameters including speeds and frequency. With the foregoing parameters met, it is recommended to engage magnetic or photo switching with its low loss, high efficiency properties. Drawing TD-G002, on the left, illustrates a positive `untuned state' and, on the right of the same drawing, a `tuned resonant state', together with a graph showing relative polarity change with component dimension changes. The area within the lower circle of the system indicates both poles are at north polarity (note the two curved arrows at each side of the magnet pole which depict the change that is/has taken place in the negative-time area).

It is possible to engineer the `Adams Advanced (Mark II) PEMG' in such a way that a machine of any desired efficiency may be constructed from 100% up to four figures and beyond.

The term `efficiency' now becomes a matter to be addressed, which I have done in the section headed `Free-Energy Devices and the Term `Efficiency' and its Connotations'.

Permanent Magnets & Work ~

Permanent magnets do not and can not `do work' --- as claimed by certain people.

It is the ether/gravity forces which cause immense attraction and/or repulsion to take place between a permanent magnet and other magnetic material. It is these ether forces that, combining with the captive permanent magnet fields, harness the energy of gravity ether forces, so often erroneously referred to as `work' `done by magnets' (refer to notes on Nikola Tesla at the end of this section).

The magnets in this situation are simply acting `as a gate', making way to the ether for the collection/release of gravitational/ether energy. The pemanent magnet is a component in the system, operating as a `gating device', as explained elsewhere in my writing --- the magnet does not generate or create power (refer to Drawing TD-G005).

If magnets were doing `work', they would heat up! The contrary takes place in negative-time systems during operation: rotor magnets drop in temperature below ambient in the above-described enviromnent. Subtracting the drop in temperature of the rotor magnets from any small rise (if any) in stator temperature, due to minuscule hysterisis, would cancel the difference. The deeper the condition of resonance in the system, the lower the temperature of the magnets and stator windings.

When magnets and stators are engineered into negative time, the rotor, upon eclipsing face-to-face with the stator poles, causes a state of negative energy/negative time in that area at that moment in time. Aimost simultaneously there is, in addition, the vector zero stress due to the resonantly-tuned wave trains of the stator pole generated voltage with that of the pulse voltage wave, resulting in a near mirror image.

The negative time/negative energy area between rotor magnet and stator independently causes an increase of 100% magnetic radiation every time a pole of the rotor passes a stator.

In this negative time, gravitational force is reversed; so in negative time, gravity becomes a repulsion force, not an attraction force.

Negative Time/Negative Energy Radiation Pattern ~

Irrespective of a magnet's gauss rating in a negative time/negative energy device, the area of magnetic radiation can be seen to double when a specific magnet and stator are engineered into `negative time'. This radiation originates at toe centre of the negative time region between the magnet and the stator, and spreads out radially and diminishes in strength as the square of the distance.

The enormous increase in radiation into space, and negative energy developed, is not generated by the magnet, as a lot of people would have you believe. Its source is (again) due to the magnet forming a gate and tapping gravitational energy with the result of gravitational repulsion, as explalned in `Engineering into Negative Time and Negative Energy'.

The area of radiation so covered by a negative time/negative energy device measures always an exact electromagnetic light gravity harmonic distance figure taken from point of origin.

These above statements are not theoretical but are indeed discoveries and results of actual tests and measurements undertaken in the laboratory by myself.

Nikola Tesla ~

While going through my notes and excerpts on Nikola Teala's findings on Sunday 20 June 1993, I discovered a prepared statement of Tesla's 10 July 1937 work and another from the *New York Herald Tribune* dated 11 September 1932.

Tesla's statement below, dated 10 July 1937, vindicates completely my statement that magnets do not and can not `do work'. Tesla's statement is:

"There is no energy in matter other than that received from the environment. It applies rigorously to molecules and atoms as well as the largest heavenly bodies and to all matter in the universe in any phase of its existence from its very formation to its ultimate disintegralion."

"A few words will be sufficient in support of this contention. The kinetic and potential energy of a body is the result of motion and determined by the product of its mass and the square of velocity. Let the mass be reduced, the energy is diminished in the same proporlion. If it be reduced to zero, the energy is likewise zero for any finite velocity. In other words, it is absolutely impossible to convert mass into energy. It would be different if there were forces in nature capable of imparting to a mass infinite velocity. Then the product of zero mass with the square of infinite velocity would represent infinite energy. But we know that there are no such forces and the idea that mass is convertible into energy is rank nonsense."

Nikola Tesla's statement of 11 September 1932, *New York Herald Tribune* is:

"The assumption of the Maxwellian ether was thought necessary to explain the propagation of light by transverse vibrations, which can only occur in a solid. So fascinating was this theory that even at

present it has many supporters, despite the manifest impossibility of a medium, perfectly mobile and tenuous to a degree inconceivable, and yet extremely rigid, like steel. As a result, some illusionary ideas have been formed and various phenomena erroneously interpreted. The so-called Hertz waves are still considered a reality, proving that light is electrical in its nature, and also that the ether is capable of transmitting transverse vibrations of frequencies however low. This view has become untenable, since I showed that the universal medium is a gaseous body in which only longitudinal pulses can be propagated, involving alternating compressions and expansions similar to those produced by sound waves in the air. Thus, a wireless transmitter does not emit Hertz waves, which are a myth, but sound waves in the ether, behaving in every rescect like those in the air, except that, owing to the great elastic force and extremely small density of the medium, their speed is that of light."

Although personal friends, Tesla and Einstein did not always agree with each other on certain points. However what Teala is saying here is that though 'E=Mc2', you can't simply choose a lump of mass such as a permanent magnet, place it in a system and extract energy from it, As aforesaid, in Tesla's own words, "the idea that mass is convertible into energy is rank nonsese."

Free Energy Devices & the Term 'Efficiency' & Its Connotations ~

The term `efficiency' or `efficiency losses' relative to an external souree, loses all substance or meaning when considering devices capable or well beyond unity. The term is no longer a yardstick, so to speak' as it becomes a relic of establishment teachings and present-day so-called conservation of energy laws, which now require to he rewritten. We must, therefore, now have a negentropy law.

Losses, if indeed any exist in a beyond-unity device, would be minuscule and of no subsance, due to the output capacity of the device.

In my opinion, the most salient factor to look for in a device clalmed to operate beyond unity, is its operating temperature under full load. This factor tells all, without the initial necessity to carry out exhaustive test procedures.

The matter of temperature or beyond-unity devices brings to mind Tesla's electric car. It is stated in my notes that the machine becnes very hot during operation. This, or course, is to be expected, as the `free-energy section' of the machine is a separate entity to the car motor proper, and in the year 1931, when Tesla tested his "Pierce Arrow" car, conventional DC motors were notoriously inefficient-around the order of 35 percent, - and, incidentally, meanwhile, haven't improved that much. In addition, the confined space would have also been of no help, even with the assistance of a fan, which also had to be used according to his notes.

However, in contrast, my beyond-unity power device (`gravity generator') would be operating at least 2O to 40 degrees Centigrade below ambient. As the father of many discoveries and inventions pertaining to coils, transformers, pulsing systems and electric motors, on reflection it is unfortunate that Tesla hadn't figured out what could be done with his pulsing systems in relation to electric motors. Had he done so, be would not have required (according to Muller) powerfull magnets or a cooling fan.

It is my opinion, after many years' experience in the fire-energy research field, that a table of negative time/negative energy `rating' be formulated in relation to devices using permanent magnets in fire-energy applications. I am, at present, endeavouring to work out a system or magnetic radiation field strength measurement as a possible means or evaluating rotary devices that utilise permanent magnets. A system of this nature would distinguish `beyond-unity shoptalk' from `conventional shoptalk' and the term `efficiency' would remaln relegated to conventional devices. As the future `beyond-unity empire' will grow and mature, so conventionalism, along with its present terminology, will wither and die.

The universe is negentropically organised and is proceeding transfinitely from disorder to order. This is not the concept of energy taught today in college and university camppuses which persist in drumming in the long since foregone notions or Sir Isaac Newton and James Clerke Maxwell. We are, right this very moment, entering a new era of science, somewhat divorced from the trappings the establishment has been peddling for decades. We do not need to `wait upon' the establishant to catch up to us here, for if we did we would still be a century behind in a century's time. It is for the establishment teachings to latch onto us, which they will do - eventually - one day. In the meatime, new science will continue to force ahead regardless, until sheer embarrassment will force classical teaching out the door.

With anti-gravity / beyond-unity devices, we must now go on to reconstitute our scientific laws and introduce a few new ones. As aforementioned, one being a negentropy law within which we must now go on to agree to the use of a more appropriate term of measurement for devices using permanent magnets in free energy applications; and, as aforesaid, the term `rating' comes to mind. For the pupose of thist treatise l will now propose to use the term `beyond-unity rating' or `BUR' as an abbreviation, for the moment.

'Beyond-unity devices' `ratings' should, in my opinion, be according to an accepted table of values, ranging from what is, at present, termed `unity' upwards, and thereby dumping the term `efficiency' completely.

As there is no upper limit of negative energy other than `blastoff and/or `self-annihilation' upon reaching absolute resonance, then a suitable table of values, with a suitable baseline, would be a practical solution. As the term `unity' has been so indelibly engrained, then it would perhaps be suitable as a `base'.

No doubt the establishment will `perform' at my suggestions and/or recommendations on this - so be it. It would only take a small section of the researchers of new science amongst the `beyond-unity circle' to agree upon the adoption of a new system of measurement and/or definition and publish it internationally along with the appropriate table of figure ratings. This would then enable beyond-unity researchers and adherents alike a more realistic platform as a base to work from, whilst still allowing the term `efficiency' to apply to conventional below-unity aparatus.

This adoption of a new and separate system (or law) of the measurnent of over-unity devices will, at the outset, identify and distinguish the subject of beyond-unity from its conventional counterparts and allow beyond-unity and anti-gravity researchers to get on with the job without harrassment from the classical thinkers.

Nexus Magazine (December-January 1993)

The Adams Pulsed Electric Motor Generator

The Real McCoy ~

It is with great excitement, and appreciation to the inventor, that *Nexus* publishes the following information on the Permanent Magnet Electric D.C. Motor Generator of Robert Adams, a former Chairman of the Institute of Electrical & Electronics Engineers, Inc., U.S.A., (N.Z. Section).

Afer having his invention suppressed for over 20 years, Mr Adams, at the age 72, has decided to share his design with the world regardless of the consequences. Mr. Adams' quest to bring "free" energy to the world has cost him dearly, as it has many other researchers who threaten to bring the "establishment" undone.

He has survived an attempt on his life by an individual affiliated with the New Zealand Secret Intelligence Service and the Central Intelligence Agency, direct suppression of his invention by former (and recently deceased) Prime Minister of New Zealand, Roben Muldoon, the giant British electronics company, Lucas Industries, as well as numerous other insurmountable difficulties that have been placed in his path. All because his invention worked. And not only that, it is so simple, any electronics manufacturer or skilled backyard-home-scientist could build one!

Inventors Beware!

In 1978 Mr. Adams discovered that inventors of machines or devices of high energy efficiency capability ("Free" Energy) are not only refused patents, but that in most cases, their inventions are classified under the "Military Use Clause", which is, of course, international. Inventors are prohibited from publishing details of their devices or promoting them in any manner if their invention is classified under this clause. In other words, their devices automatically become the sole property of the "establishment".

The fact that there is an established mechanism to suppress energy inventions of this nature has been a closely guarded secret for many years. Many inventors have made such claims, but the general public rentain oblivious to the fact that they are being deprived of clean and free energy by organisations that would rather make money and hold power over We public, than allow such technology to become widely available. Yet another example of the abuse of power. (No pun intended.)

"Free Energy" ~

This motor generator would be called a "Free Energy" machine by most individuals. It is, in fact, a device that converts the perpetual motion of sub-atomic particles, known in physics terminology as "particle spin", into conventional electric power. It is a widely accepted fact of physical law that sub-atomic particles are in a state of perpetual motion. Anybody who tells you that there is no such thing as perpetual motion is either ignorant or a liar.

As Robert Adams states, "Our universe is a sea of energy - free, clean energy. "It is all out there waiting for us to set sail upon it" Adams has built a number of permanent magnet electric D.C. motor generators based on the principle outlined in this article, some of which have demonstrated an electrical efficiency of 690% and a mechanical efficiency of 620%. The devices run at room temperature. Any device that doesn't could not be running at over 100% efficiency, as heat is the major result of hysteresis losses that are induced in any conventional electric motor or generator. Radiated heat is a sure-fire sign that a power generator is not running over unity, as all heat radiated by such a device is wasted energy.

I will remind readers once again at this point that Mr Adams is not a fly-by- night, propeller-head, whacko, techno-boffin. He is an electrical engineer with over 60 years experience in the field of electrical engineering, which has included designing and building equipment for use in power stations, broadcasting facilities, airport communications centres, etc. He is a former Chairman of the Institute of Electrical & Electronics Engineers, Inc., U.S.A., (N.Z. Section), and his resume includes personal referees ranging from a former New Zealand Commissioner of Police, a former Chairman of Air New Zealand, (and several technical specialists from the airline), as well as an Ex- NASA scientist. Nexus would recommend to anybody interested in, or presently building a device of this nature, to try building a device based on Mr. Adams plans. His machines have demonstrated the ability to generate free energy, unlike most of the theoretical models that are promoted as over-unity devices.

General Description ~

The invention may be broadly said to be, an electric motor and/or generator comprising a rotor consisting of a number of radially arrayed permanently magnetised poles, and a stator consisting of a number of radially arrayed permanently magnetised poles, together with a number of wound poles. The rotor's permanently magnetised poles use ferite magnetic cores, and may comprise any even number of poles. The stator's wound poles employ steel or iron cores. The device is essentially a D.C. machine, but may be fed A.C. input with the use of a solid state convertor.

The Rotor uses a number of similar polarity permanent magnetic poles, i.e., all-South or all-North. A further set of wound poles are radially arrayed in the stator, and are arranged in such a manner as to be fed energy, that is excited by back E.M.F. energy, from the poles of the rotor.

Associated circuitry is provided to feed the energy back to the drive poles of the motor.

The resulting characteristics of this design is that once the rotor is moved from the position of equilibrium, each pole is attracted to, or repulsed by the stator poles, but at a precise geometrical point with respect to them, the input current to the drive coils ceases. As a result, the collapsing field current is in the opposite direction to the applied force, thus reversing the magnetic polarity of the stator coils. This forces the rotor poles away (reaction), which is the instantaneous response of a system to an applied force, and is manifested as the exertion of a force equal in magnitude, but opposite in direction to the applied force.

Pulsing the D.C. input current, overcomes losses generated in conventional motors. According to classical electrical engineering theory, efficiency is greater the more nearly equal the Back E.M.F. (electromotive force) is to the applied voltage, i.e. the lower the input current. Figure 6 shows that

there is minimum 100% back E.M.F. relative to the supply source of input D.C. voltage (according to classical electrical theory), which virtually depicts a sine wave due to the effect of the collapsing field.

This effect also overcomes the electrodynamic torque problems associated with conventional motor designs. (As input power varies with the duty cycle pulse; i.e. the lower the input current, the lower the input current, and the lower the speed, the greater the torque.) At clipoff, the badk-EMF ceases, the collapsing field takes over, opposing the outgoing rotor magnet and thus increasing momentum. With this design force is applied twice during each D.C, pulse, with pulse-on, and with pulse-off.

The timing of the pulses are determined by the dimensions of the motor itself, i.e. the speed of rotation of the motor's central axle, the position of the rotor magnets in relation to the stator windings, as well as the distance that the rotor magnets travel when passing across the poles of the stator winding.

Fig. 1 to Fig. 4: How to calculate the D.C. pulse timing of the stator coils on the Permament Magnet Electric D.C. Motor Generator.
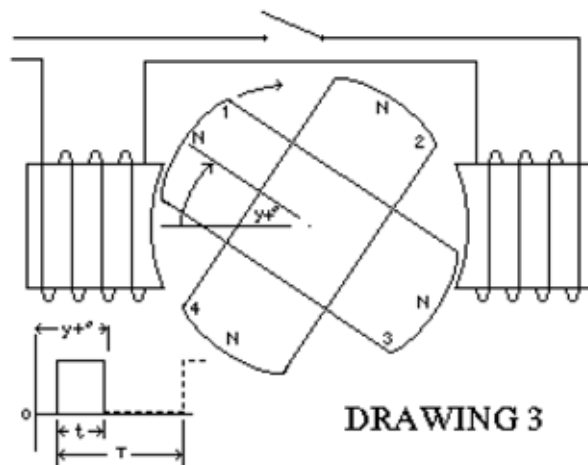
Fig. 1
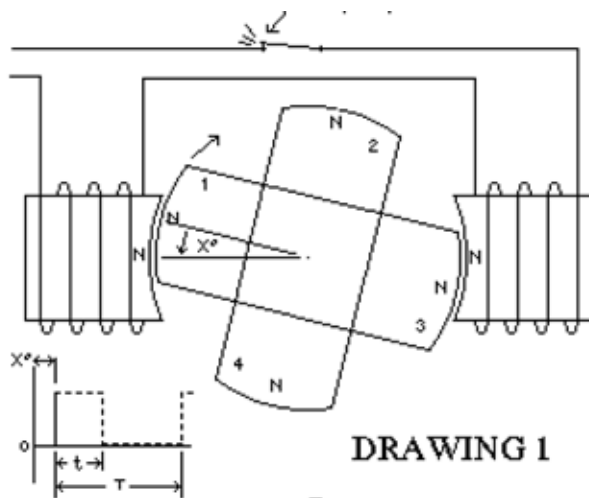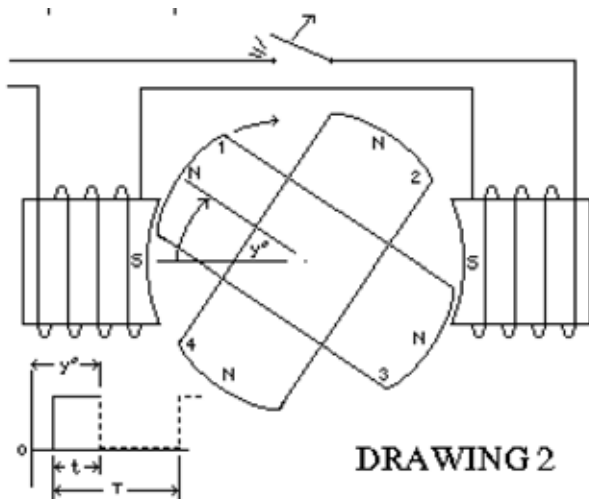
DRAWING 1

Fig. 2

DRAWING 2

Fig. 3

DRAWING 3

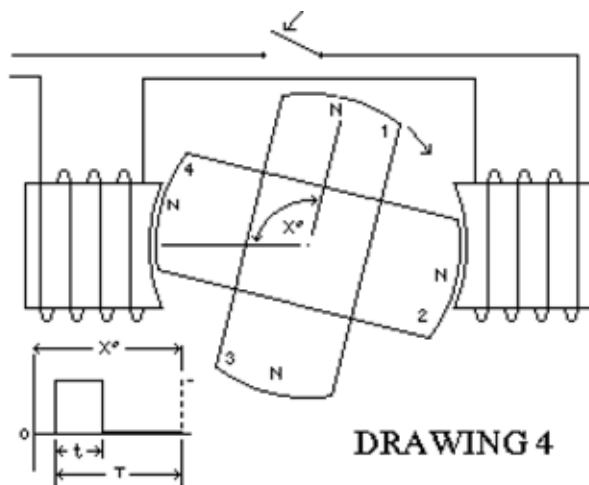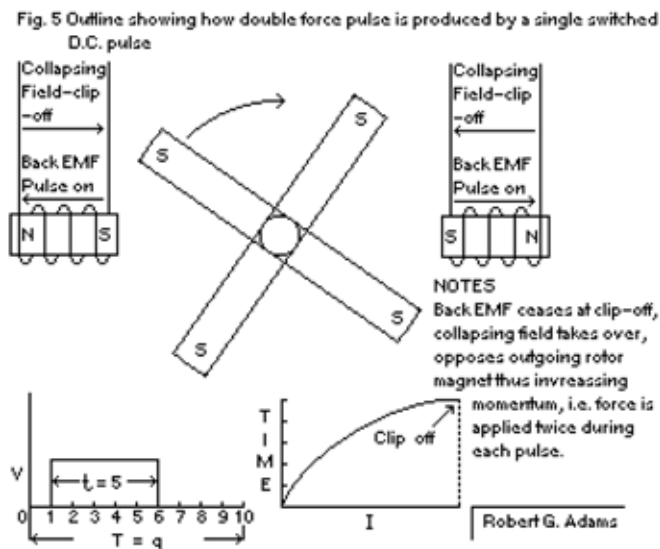**Fig. 4**

DRAWING 4

Fig. 5: Outline showing how double force pulse is produced by a single switched D.C. pulse.

Fig. 5 Outline showing how double force pulse is produced by a single switched D.C. pulse

NOTES
Back EMF ceases at clip-off, collapsing field takes over, opposes outgoing rotor magnet thus invreassing momentum, i.e. force is applied twice during each pulse.

Robert G. Adams

Fig. 6: Graph showing oscilloscope trace of characteristic voltage across stator windings.

Fig. 6 Graph showing oscilloscope trace of characteristic voltage across stator windings.
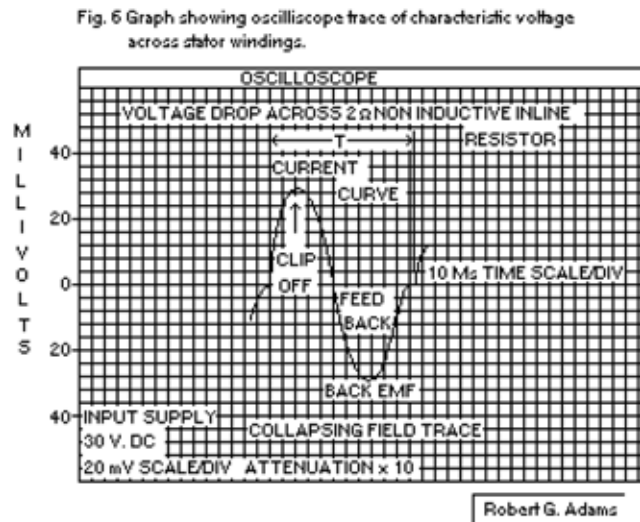
Construction & Operating Notes ~

Important Factors: Care must be exercised when assembling and wiring the drive windings to make sure that their polarities match the rotor magnet polarity. Common earthing must be avoided in order to preclude voltage and/or current loops. (If a number of drive windings do need to be commoned, use very low resistance conductors and employ a transmission type earthing system only.)

Stator (Drive) winding resistances are your choice. Robert Adams' machines were built varying from 0.03125 to 27 ohms per set, He has experimented with two, four, and eight pole machines. Efficiency increases with the number of wound poles in the stator.

Motor generators with a single, two, or three phase can be built to this design. A number of rotors may be ganged together on the same shaft in order to increase power output and does not require the use of any commutator, brushes or slip rings, all of which contribute to energy losses in ordinary motor generators.

Unlike conventional Series D.C, machines, this motor can be off-loaded, finds its own speed, and will run at that speed indefinitely. A conventional DC motor will run itself to destruction with off-loading. It requires no cooling, nor any overload protection, even if short circuited.

A number of highly qualified individuals have seen these devices running and producing energy at well above 100% efficiency. Let's hope that some of you can achieve similar results.

General Construction & Testing Procedures ~

An ideal drive winding pole can be very readily available by obtaining some B.P.O: 3000 type relays (ex Telecom). Simply remove present winding, cut core in half, re-thread, assemble and fill with winding. This is a quick and cheap method of obtaining a very high quality non-retentive steel core. As aforementioned, winding resistances used by the inventor varied between 0.03125 to 27 ohms.

The above windings described are ample to drive prototypes even in a 180' application. You will find speeds up to 2500 rpm with only two of these windings 180' apart - no problem.

For A,C. Output Coil Windings and Core: Ideal cores can be built cheaply and quickly by dismantling a spare power or audio transformer and utilising the 'I' section laminations, obtain winding former to fit same and it is ready for winding. Turns and gauge will depend on what voltage and current you choose. Remember, at this stage, you should only be building a demonstration model, so to speak.

After a few changes, corrections and/or general modifications you will be ready to put a mechanical and/or electrical load on the machine. For an electrical load it is suggested you firstly wire up a bank of 6 - 12 LEDs. If everything is go, then switch over to torch lamps: Later on with a bigger machine - car lamps, or maybe household lamps and a mechanical load simultaneously.

For Efficiency Testing: Milliamp meters are useless for this machine - do not use for testing. Use only high quality digital true RMS meters, with input power, for high accuracy, use only a high quality electronic wattmeter: These instruments measure extremely accurately any wave-shape. A good twin-beam oscilloscope is a must: So too a high quality electronic temperature-measuring instrument with appropriate probe.

Drill dead centre of one or both cores, as per drawing. Probe be must be good fit. If, after one hour of running on load and temperatare is around 40 degrees, that will indicate things are most likely working correctly.

Don't forget your ambient in Australia will be considerably higher than ours. Read the inventor's rotary and solid state efficiency measurarnent data sheet.

Rotor-stator air gap is not critical, but the closer the better.

As stated elsewhere, the stator pole faces, if desired, may be reduced to 25% of the rotor pole face area, hence large drive windings and high drive current is not required.

With care to detail, correct mathematical calculations and high quality instrumentation correctly utilised, incredible results can be expected. Study data submitted shows those results have been attained on several machines.

Temperature of conventional machines internally reach boiling point after fifteen minutes running. Check the Adams Mctor Generator after running on full load for 48 hours, or after fifteen minutes if you prefer not to wait that long. You will be very pleasantly surprised - I refer to maximum loading conditions, not free running.

Mechanical Loading Test: A high quality strain measuring instrument must be used in the universal "pony brake' method of mechanical load testing.

RPM tests must also be obtained with a high quality tachometer and/or oscilloscope reading and use the universal equation to calculate mechanical machine efficiency.

Note: Very Important Factor --- As you increase duty cycle, current input will increase and

efficiency will decrease. From random test sheet results I have chosen it is very clear what to expect upon increasing duty cycle.

Note: The Adams Motor Generator is so efficient, so simple and consequently it's construction is such that it surpasses overwhelmingly anything before it, thus lending itself admirably to mass production.

One of a number of unique features of the Adams Machine is the fact that the same rotor poles are utilised simultaneously for driving the machine and generating output energy.

Construction Equation - Adams Motor Generator (20-12-76): It was found, after considerable development work, that maximum electro- magnetic effect produced in the stalloy stacked generating pole windings occurred when the dimension of the mating end of the stacks were four times greater in area than the rotor magnet's pole area. Hence the overall design of the machine incorporates this derived ratio of one to four. (The Adams Equation, as applies only to the Adams Machine).

Feedback (20-12-1976): The feedback, produced by the output generating coil, produces a polarity reversal normally resulting in large eddy current losses in conventional machines, but, in the Adams Machine, it is harnessed to develop further additional torque to the magnetic rotor. The larger the output generating coils the greater the torque delivered to the rotor.

Power Factor (1-7-1976): There is no power factor loss because the Adams Machine runs in a condition of resonance. Therefore, the Power Factor Loss is zero.

Nexus Magazine (June-July 1995)

The Adams Super-Power Multi-Polar Magnet

I have for many years theorised the existence of four poles interacting in any magnet. There is little doubt that two poles dominate from what is observed, and taught, in classical texts.

However, since my discovery of engineering magnets into forming four poles - and, in so doing, quadrupling the energy - surely some light has been shed on the theory of the existence of four poles. Bruce Cathie and I will investigate this further when time permits.

A rectangular or cube magnet, when engineered into the Adams technology, becomes a unit consisting of four twin poles, each face containing a north and a south pole, separated by a zero vortex in the centre of each of the four twin poles, and all displaying similar energies.

Ironically, but not unexpectedly, this super twin-pole magnet is a very valuable adjunct to further advancement of the Adams Motor technology. The energy found on the edges of each of the four faces is very high-25 per cent of the total energy of the full face.

The present lab magnets are approximately three-quarters-of-an-inch cube. The edge of any face

will hold a five-kilogram steel or iron block in mid-air. When the full face of the magnet is attached to metal, a force of beyond 20 kg is required to remove it. In my presentation to the NEXUS Conference, I advised tests would be carried out this month to determine the strain required to remove the magnet.

The dice-sized magnet was attached to a steel plate on a ceiling rafter and, with the aid of a chain, a 15-kilogram block was first attached to it; then a 4.7-kg block added on with a nylon rope; then another 200-gram block was attached; then, a fourth 2W-gram block. The magnet still hanging fast, a 100-gram block was added; then...wait for it...CRASH to the floor. The magnet was still attached to its anchor on the roof-rafter!

A magnet, approximately three-quarters-of-an-inch cube, weighing only 60 grams, capable of holding a weight of beyond 20 kilograms in mid-air, 333.333 times its own weight? Will this at last have something of an effect on the closed ignorant minds of conventional science?

The way now must surely be clear that space/gravity energy via electromagnetic forces of permanent magnets is not impossible nor difficult to harness. The space/gravity energies are clean, non-exhaustible and free. The Adams technology has proved this and leaves no grounds for dispute.

Einstein's sacrosanct theories of relativity, and the laws of thermodynamics, are the most remarkable and inexplicable aberrations ever recorded in scientific history. These draconian false teachings have been instrumental in impeding tbe process of science towards free, clean energy.

Classical Theory & Adams Technology ~

The classical theory of magnetism from the textbooks attiibutes the phenomenon to the motion of electrons within the atoms of molecules. There is evidence that the orbital electrons in an atom not only revolve about the nucleus of the atom, but also each individual electron spins about an axis througb its centre. Isis believed that in highly magnetic materials, each atom has many more electrons spinning in one direction than in another.

In the submicroscopic region, i.e., the "domain", many of these atoms with electron spin in one direction create a magnetic field which effectively supplements the field engendered by the revolving electrons. Each domain thus becomes a tiny magnet. When the domains are in random state, the substance as a whole is not a magnet. The application of external magnetic field will reorient the domains and produce a magnet in the way described above.

When the application of an external magnetic force has been applied and all the domains have been aligned, the condition of MAGNETIC SATURATION has been reached, and any further increase in strength of the external force field will not increase the magnetisation of the iron any further. With the advent of the Adams Permanent Magnet Technology, is it not further evidence that conventional text teachings have reached the stage when they should be rewritten?

From the observations of certain lab experiments with ball-bearings, it is the opinion of the discoverer that the electrons circulate in conjugate pairs and have a spin opposite to that of rotation, and that the spin is four times greater than that of the orbital rotation. I note also that conventional texts prefer not to state direction of spin, nor velocity relative to orbital motion.

I do not therefore subscribe to the statement that "in highly magnetic materials, each atom has many more electrons spinning in one direction than in another". I feel such a condition cannot pertain in light of my discoveries.

Also to be addressed is the matter of the massive energy increase resulting from the Adams applied technology. Are man-made scientific laws once again violated? If the magnetic material is saturated when subjected to an external energy source, the Adams technology must then be gating space/gravity energy.

There is overwhelming evidence that space/gravity energy can be concentrated, focused and/or magnified by permanent magnets.

"The Golden Ratio Motor Generator"

Dr. Robert Adams
(October 19 2001)
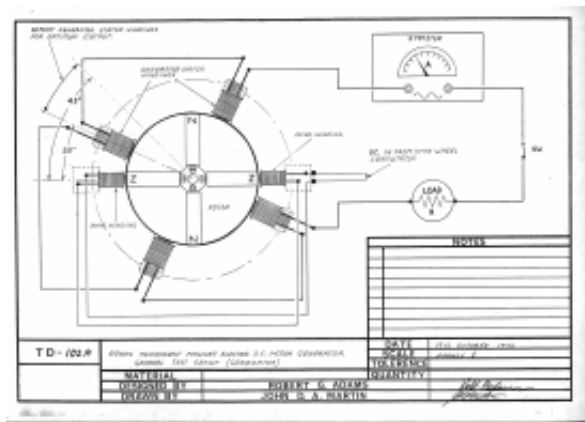
(**Click here to view full-size drawing ~ 670 kb**)

A young enthusiastic colleague of mine, currently resident in Auckland, New Zealand, by the name of Andrew Thorpe, phoned me today to advise that David Saltresse of Wales, Great Britain, had contacted him via email to advise him he had worked out the geometric placement of all 4 of the output A.C. generator windings of one of my motor generators which was originally invented in the early seventies.

He advised Andrew that the geometric placement of the output generator stator windings was measured with the aid of incorporating the Golden Ratio. "All 4", David said, "are found to confirm they correspond directly with the golden ratio geometrics".

There was always the remote possibility that out of the many hundreds of people worldwide who would have attempted to replicate my original machines, few, if any, would have taken the advantage of probing deep into the detailed schematic diagram of this particular motor generator which I included in my original motor manual, published by *Nexus Magazine*, possibly because that schematic diagram appears at first glance unorthodox or a difficult exercise to achieve! As David Saltresse discovered, this is not so, if you look with eyes to see at this schemtic diagram.

Congratulations go to David Saltresse of Wales.

Now, further secrets are revealed in which I can advise readers that I apply the so named "Sacred Geometry" of the golden ratio in conjunction with a very important natural occuring constant of nature. I also apply this same equation to resistance measurements, load resistances, voltage, geometrics of magnets, rotor and stator dimensions. This equation also applies to the mass and placement of the addition of certain unusual material used in the construction of this awesome heat generating rotor system. This is a unique system in that it is an implosive and totally reverse engineered mahcine which operates in the real realm of unity. The power manifested over time is "infinite" and therefore immeasurable. A reminder here to those unaccustomed to the understanding of the condition known as Infinite Energy, irrespective of any measurement of input energy losses and input power, there is no known value / measurement of infinite energy output power. Because of its infinity it simply cannot be measured!

Adams Special Release of Information for Those Experimenting with My Motor-Generator Technologies

From a number of reports I am in receipt of I find experimenters are using powerful rare earth magnets in their machines. This is in order only if you are incorporating the correct operating parameters, i.e., first of all upon handling the magnets, it is very quickly recognised that they are very powerful for such small dimensions. Does it not strike you then that since they display such obvious considerable power, is it then not logical that considerable impulsing power is going to be required to drive the machine once the magnets are installed in the device.

The cardinal mistake being made here is that most of these experimenters are concerned about I^2R losses! If you are seeking high/super performance with these powerful magnets, then discard all concerns in relation to Ohms Law, for in the Adams technologies Ohms Law becomes a non-entity. Instead of expecting results of a high order with stators of very low resistance, such as under 10ohms, increase the total series electrical resistance instead to 72ohms and instead of expecting spectacular results using these powerful magnets with only 12 - 24 volts, increase the voltage to a minimum of 120v. Upon having done this you must give attention to other important factors, i.e., stator to magnet air gap should be 1 - 1.25mm, impulse duty cycle should be 0.25 - 0.35, "mosfet" gate signal impulse 10 - 20v of good clean stable D.C. Upon initial experimental tests, I have always used batteries. Reduce the face area of stators to 75% of the magnet face.

Now having said all this, choose your own method of signal switching, whether it be photo, Hall, magnetic, reed or mechanical, etc.

Upon fine tuning, and now having reached greatly increased power and performance, 'DOUBLE' the power supply voltage to 240v and you will have a machine in the "kilowatt" range, the exciting stage of your progress. There are a number of various methods of harnessing considerable aetheric energy from these machines. In this respect I strongly urge you to study Tesla radiant energy.

Recommended Reading:

"Physics Without Einstein" by Dr. Harold Aspden, United Kingdom.

"Thermodynamics and Free Energy" by Dr. Peter A. Lindemann, USA.
"Secrets of Cold War Technology" by Gerry Vassilatos, USA.
"The Cosmic Pulse of Life" by Trevor James Constable, Hawaii.
"Nicola Tesla" by Leland Anderson, USA.

Miscellaneous Notes by Dr Adams

Construction Equation - Adams Motor Generator (20-12-1976) ~

It was found, after considerable development work, that maximum electromagnetic effect produced
in the stalloy [sic] stacked generating pole windings occurred when the dimension of the mating end
of the stacks were four times greater in area than the rotor magnet's pole area. Hence the overall
design of the machine incorporates this derived ratio of one to four. (The Adams Equation, as
applies only to the Adams Machine).

Feedback (20-12-1976) ~

The feedback, produced by the output generating coil, produces a polarity reversal normally
resulting in large eddy current losses in conventional machines, but, in the Adams Machine, it is
harnessed to develop further
additional torque to the magnetic rotor. The larger the output generating coils the greater the torque
delivered to the rotor.

Power Factor (1-7-1976) ~

There is no power factor loss because the Adams Machine runs in a condition of resonance.
Therefore, the Power Factor Loss is zero.

The Adams Pulsed Electric Generator: The Conspiracy ~

I have for many years been waiting the opportunity to make a start on writing about my life as an
electrical engineer and inventor, but have been reluctant to do so because of the possible reaction
from one formidable individual who was instrumental in causing me untold frustration, ridicule,
anxiety, financial problems, and health decline.

With the passing of Rob Muldoon, I now feel more deposed to exposing what he and his regime
subjected me to, and the possible subsequent valuable loss to our country as a result. I personally
had a meeting with Muldoon and others at his home office in Tamaki regarding my invention.

The result of the meeting was that he recommended me to the Inventions Development Authority. In
all good faith I duly contacted the inventions development authority and that folks was the beginning
of the saga which was destined to follow.

The Inventions Development Authority passed me along to DSIR, who at the time were frantically
working on their own energy systems, and assisting Government with various 'Think Big' projects.

Time rolled on, and DSIR monkeyed me around for several months; there were, as always, excuses

for not proceeding with completion of their strange testing apparatus to test my machine.

In the meantime, Rob Muldoon appoints himself Minister in Charge of SIS, the department with world-wide connections to the CIA, ASIO, FBI and Interpol!

I had meanwhile, designed a bigger proving machine and had placed orders overseas for magnets and devices for pulsing equipment. Time went by, well beyond expected delivery dates, with no sign of the devices, nor any correspondence pertaining to my orders to any of the electrical companies.

I lodged person-to-person calls to the people who originally signed the confirming correspondence to me, to be told that "that person in no longer with us and we cannot help you any more."

Muldoon had by now, committed the whole country to the New Plymouth Power Station, Huntly Power Station, Marsden Oil Refinery, etc etc. The Government signalled its intentions that is was in no way going to let a little outsider like me come into the act with a revolutionary machine capable of countering
the so-called energy crisis.

Muldoon at this stage, had me well taped up so to speak, My phone, I was informed, was tapped, my mail was intercepted and I was kept under observation.

I held a number of meetings with the Chief Post Office Investigating Officer regarding the matter of mail disappearance and interception, with the same negative and unsatisfactory answers and results as from other Government departments. After the lapse of several months, the machine was finally evaluated by DSIR.

I must mention here an interesting fact regarding the evaluation of my machine by the DSIR. It happens that a certain electrical engineer that I was involved with, who incidentally, also evaluated my machine, informed me that the person designated the role of evaluating my machine in DSIR, was in fact a mechanical engineer with no background, knowledge, nor qualifications of any description pertaining to electrical or electronic engineering, and further that the Auckland Division did not posses a member on the staff qualified to undertake such a project. This person none-the-less did do the evaluation and indeed signed the test results.

(You may well wonder how did this independent electrical engineer have such inside information on the DSIR? Well, it so happened that he himself had been their one and only electrical engineer in the Auckland Division, and I might add, a specialist on electrical motors too.)

That an unqualified person was assigned the task of evaluating the possibilities of a revolutionary motor is further evidence to me of conspiracy.

DSIR Evaluation - 5.8% efficiency ~ Lucas Industries Evaluation - 100% efficiency!

Other independent eminent engineers' findings, including those of the ex-electrical engineer from DSIR varied from 96.93% to 100% efficiency!

At this stage, I had unwittingly invited the then chief departmental district electrical engineer to be

present at my laboratory to witness the phenomenon of one particular model displaying identical input and output wave forms on a twin beam oscilloscope with the machine windings running at ambient temperature, a condition which cannot be denied as proof of 100% efficiency, without any further tests being required.

He conceded there was no doubt whatever what he was witnessing was real, but like all academics who stick to their ivory tower scientific establishment beliefs, he said it could not be done.

Upon reading certain of my writings, it will be found that at one time in earlier years, I disbelieved in any kind of conspiracy regarding inventions pertaining to energy efficiency, and certain communication installations. I
must now say, having unwittingly got myself into the web of the insidious conspiracy, through treading the path of an inventor in the field of free energy, that I now know from personal experience the pitfalls, stone walls, and blatant obstacles and barriers designed to hamper and silence inventors with such devices as energy efficient machines.

I decided to investigate the fate of a number of other excellent energy- efficient inventions, and learned that too many good inventions were never heard of again. Inventors themselves were turning into hermits, meeting with unexplained accidents, even totally disappearing. In many cases their laboratories were searched and ransacked, equipment confiscated and/or destroyed, and even attempts made on their lives. Others are frequently bought off in return for silence.

The conspirators, who are also the cartel operators are determined to continue to make mankind use fossil fuel for all possible energy requirements and will go to any lengths to achieve just that.

I have since superseded the above machine and have built and proven two different types of self-sustaining motor generators with efficiency ratings well beyond unity.

Adams Breaks the Gravity Barrier ~

Inventor Robert Adams appears to have broken the gravity barrier, with his advanced Adams Electric Motor Generator operating in a high state of resonance and apparently tapping gravitational energy.

"During the later months of 1992, I derived what I considered to be an equation for possibly the ultimate in rotary motor generator design. The purpose of this exercise, was to ascertain whether further unconventional design features of the machine parameters, using this equation, proved certain theories which I had previously discussed with Mr. Bruce Cathie, an internationally recognized New Zealand researcher in this field. (Cathie is the 'father' of grid harmonics)

Upon applying the 'equation' to the machine parameters and testing it, there was no doubt the machine was running in a higher state of resonance than previously obtained.

It had been arranged beforehand between myself and Mr. Cathie that, should the results of this test be of some substance, Mr. Cathie would travel from Auckland to Whakatane specifically to check the machine parameters with his 'harmonic equations'. These results confirmed the theory which we had previously discussed and planned to implement.

The results of these first trial tests have been SUPERCEDED, with the new figures obtained being found beyond anything that is known of in the present- day field of free energy research. There is every possibility that these latest figures, also, will be surpassed in the near future.

The equations and how they are applied are hidden within certain parameters, and, to this end, it could be said that to reach the ultimate in rotary overunity devices is not possible without the correct application to all
parameters of the machine using the 'Adams Pulse Method' and the Adams-Cathie equations.

The above methods and results give us a valuable lead in the realm of solid-state gravitational energy research. The equations and methods of application in design procedures, however, remain, at this stage, secret. The efficiency figures possible from the device are such that they simply cannot be published.

I wish readers to refer further to the following discussions on Wilhelm Muller and Dr. Rolf Schaffranke, the general content of which relates to my discovery of the mysteries of magnetism some twenty-four years ago."

The Adams Pulsed Electric Motor Generator: On Wilhelm Muller ~

Reference to an article authored by Tom Valentine, California based freelance journalist, in regard to claims by Wilhelm Muller and his magnet manufacturers.

I must take Muller and his magnet manufacturers to task on their statement that "magnets can do a tremendous amount of work" - this is not so. In an over-unity rotary machine, the magnets are 'assisting' to run the machine, but they are not generating the extra energy beyond the reaching of 100% efficiency. The magnets are not doing actual work, as such, beyond that point.

It is likely Muller's machine is operating, according to the efficiency figure Muller quoted, somewhere on the near lower end of a positive resonance curve. From the generally known information on his device, this would be the likely area in which it is operating. If this is so, then the chances of greater efficiency are slim, particularly on account of it appearing to be operating in a positive mode. For the rotor magnets to operate as a gate to harness gravitational energy beyond unity, it must be in a negatively resonant mode and not operating in a closed magnetic circuit system.

Bruce Cathie and I spent an entire day together in January 1993 going over his harmonic equations in regard to my advanced machine, and confirmed that it was running in an advanced state of resonance, harnessing gravitational energy and demonstrating evidence of the magnets forming a 'gate' to harness one half-
cycle of the gravitational pulse, but doing no actual work over and above the 100%.

In regard to another claim by Muller that he had to use powerful neodymium magnets, this also is contrary to our findings. It matters not whether you use standard off-the-shelf 'alnico' magnets or powerful magnets, the results are no different. It is not necessary to use powerful magnets to prove if a machine can be constructed with over unity capability. This fact has been shown repeatedly with the Adams machines, using small and weak magnets.

The inference also that Nikola Tesla might have required today's advanced magnetic materials to

achieve over unity results, is also totally wrong. The only difference between using ordinary magnets like 'alnico' and, for instance, 'samarium cobalt', is that you get greater energy output from the stronger magnets by way of their ability to detect and amplify this energy on a greater scale; and, therefore, upon utilizing the Adams pulsing system, you can have a device using any ordinary magnets capable of not only 100% efficiency, but also of being tuned into operating as a gate in detecting and delivering gravitational energy.

As for the establishment's texts stating that "magnets do NO real work", the establishment, for once, is correct. It is, however, interesting to note that this is a very 'convenient' fact for the establishment to expound upon - there could be an underlying inference here that magnets are useless for machines designed to achieve beyond unity results.

Permanent magnets and their place in science today need to be more fully understood."

On Dr. Rolf Schaffranke ~

"Reference to an article written by Dr. Schaffranke in THE MANUAL OF FREE ENERGY DEVICES AND SYSTEMS, VOLUME TWO, published by D.A. Kelly, in which on page 7, paragraphs 7 and 12, Dr. Schaffranke erroneously maintains it is NECESSARY to use super magnets to tap gravitational energy.

I found that my original 1970 open magnetic circuit motor generator is superior to my 1976 closed magnetic circuit model in regard to the results of obtaining and maintaining a correct harmonic vacuum oscillation and so tapping gravitational energy during one half-cycle of the gravitational pulse wave.

People who make such claims regarding the use of super magnets, obviously have little or no experience in the realms of rotary free-energy devices using permanent magnets. Over twenty years ago, I proved that even tiny weak magnets bought off the shelf and incorporated into my machines yielded efficiency into the hundreds of per cent over unity.

A permanent magnet is an entity unto itself. It is no different in any way whatsoever from its brothers made of different materials; it is still a permanent magnet irrespective of its gauss rating.

These claims are tantamount to saying that you can get more than 2.2 volts out of a lead acid cell simply by increasing its ampere hour rating, or conversely, you use a ten horsepower motor to run a machine that only requires one horsepower.

I reiterate: the sooner science rejects conventionalism, the better for humankind.

If indeed magnets were doing a tremendous amount of work, they certainly would not last long in any machine. There are secrets and mysteries surrounding magnets and collapsing field energies, and only after exhaustive studies of these two phenomena in practice, do these mysteries unravel themselves and emerge in their glory, and, correctly applied through the use of the required mathematics, pave the way to tapping gravitational energy in astronomical quantity.

For high-power rotary machines, however, super magnets are the obvious choice, for reasons of higher power capabilities, reduced weight and volume. When installed in an 'Adams' machine, these

super magnets enable the opening up of clearances between rotor and stator without appreciable loss due to the high
overall efficiency of this machine.

If indeed it were possible to induce magnets to do a tremendous amount of work, as claimed by the aforementioned people, then I claim that the magnets must first have very substantial energy imparted to them to undertake the task ahead. Secondly, when reaching this 'tremendous' state, they would start heating up and continue to do so until they reach the point whereby their magnetism would begin disintegrating, and continue to do so until the machine would eventually come to a halt, unable to start again.

There are a lot of people out there striving for the ultimate in rotary electrical machines. They all have my personal blessings for their endeavors, but may I hasten to add for those who make such claims, that they
exhibit a lack of experience and knowledge of the capabilities of permanent magnets in rotary electrical machines.

But don't be disappointed, readers, as I assure you that permanent magnets are indeed the answer to free energy. Correctly adapted to a rotary machine they are the 'gateway' to harnessing gravitational energy.

With the application of the 'Adams resonant pulse frequency equation' and the 'Cathie harmonic equations' combined with the 'Adams Pulsed EMG System', incredible energies can be very easily and cleanly made available.

I wish to state to all readers at this particular stage, that I have only, in the past year, made the decision to publish certain aspects from my twenty years work in the field of free energy research.

There are no doubt many other researchers who, for various reasons such as lack of finance, fear, suppression and very many other barriers, have not had even a chance to be heard. It is to be hoped the day will soon arrive when all can benefit from our work."

The Adams Pulsed Electric Motor Generator (January 1993) ~

An explanation to readers on matters pertaining to hysteresis loss, eddy current loss, magnetic drag. Also some advice regarding further information required from enquiries received to date by interested parties:

I would first like to state that it has been made clear that this machine has been proven to be capable of over-unity performance, plus the fact that it has proven itself capable of returning energy to its supply source. So we now come to the matters mentioned above.

If a machine is to run at unity or better, it must first 'overcome' those problems found in the conventional machine, which, of course, are principally those of magnetic drag, hysteresis loss and eddy currents, all of which waste energy in heat and hence require a cooling fan - with its attendant losses as well.

As explained previously, the Adams machine runs cool in comparison to the conventional machine

and does not, therefore, require a cooling fan. Now these factors surely speak for themselves. It must also be borne in mind by the reader that in the conventional AC or DC machine, the internal heat of windings and stators reach boiling point within fifteen minutes. The Adams machine does not have this problem.

Given these salient factors, which in themselves are a starting point for those of you who are forward-thinking, I feel I have provided sufficient hints, information and guidance to enable those astute enough to realize the
potentiality of the principles given, to build a machine for themselves according to their own leanings as well as along the lines of the Adams machine.

Most of you know of the manual which has been published and distributed by NEXUS Magazine. My purpose in compiling this manual is to give those interested an insight into the principles of the mysteries of my machine, and I expect those interested, patient and persevering enough to accept that they must work out and work with these mysteries and to, like myself, to battle to get there. Only then will true understanding and enlightenment reveal itself and true reward, however slowly, be theirs.

Notwithstanding these statements however, I submit here a few further valuable recommendations for readers, and as time progresses, and as time permits, some further such tidbits of information will be drip-fed through NEXUS as a form of encouragement to all concerned.

I would like to inform readers at this point in time that, because of the steady flow of response I have had since publication in NEXUS, by enthusiasts, interested parties and investors alike, it is no longer possible to address enquiries of the nature of those above individually, other than on a consultancy basis. Although I will continue to contribute certain articles to NEXUS as long as I am able, and will continue to personally reply to all mail, I ask readers to kindly understand that a good deal of my time is involved in consultancy already on my advanced projects, so my free time is somewhat limited. I encourage readers to keep their eyes on NEXUS as I intend to remain as loyal to them as they are to me.

Here, then, are those few further recommendations to readers. If contemplating the construction of a proving machine, note as follows :

(1) Don't purchase expensive powerful 'neodymium' or 'samarium cobalt' magnets   without first having experience with cheap easy-to-get 'alnico' magnets, for if you commence with powerful magnets you will find yourself facing powerful problems. Using powerful magnets will not prove anything beyond what alnico will do. However, given this, if you feel you MUST choose powerful magnets, for whatever your reasons, take heed -great care is required in the handling of them to preclude personal injury.

(2) For a proving machine do not use less than 10 ohms each for two stators at 180 degrees apart; recommend series mode for first attempt. Don't be concerned about start windings initially and, remember, what can be achieved MICROscopically can be achieved MACROscopically and so I strongly suggest - walk before you run.

(3) Should you experience any difficulty in designing and constructing the tapered disc contactor

(machining, etc.) then use electronic switching, i.e. photo, Hall effect, or inductor effect, with switching current transistor, etc. The machine, correctly constructed, should still deliver a minimum 107% efficiency. The charging effect will, of course, be lost, and the input current to supply the electronic switching will raise the total input quite steeply. The point to be made here is that in using electronic switching, in a larger machine, the degree of loss due to this use of electronic switching is negligible.

However, for those who are seeking greater efficiency figures, it is advised to stay with the tapered disc contactor method and build a small wattage unit, i.e. 0.25 to 1 watt. This is the area of power rating within which you will gain quicker and better results which, in turn, will provide the necessary experience for designing and building a larger unit.

Once again the inventor cannot stress the importance enough, for those who wish to construct a successful device, to start at the bottom rung and listen to what the device is saying to you as you go along.

Note for the Curious ~

I have received a lot of requests regarding an explanation accounting for such low temperature operation on full load. This one fact alone is indisputable evidence of a very high efficiency rating.

I have therefore decided to make up a set of drawings which will explain to the reader the questions regarding hysteresis, eddy current and magnetic drag losses, as well as temperature ratings, etc.

These drawings will be accompanied with written explanations concerning the 'how' and 'why' of certain factors.

These drawings and their accompanying information will be available directly from the inventor at the address given below at a cost of NZ $20.00 including postage.
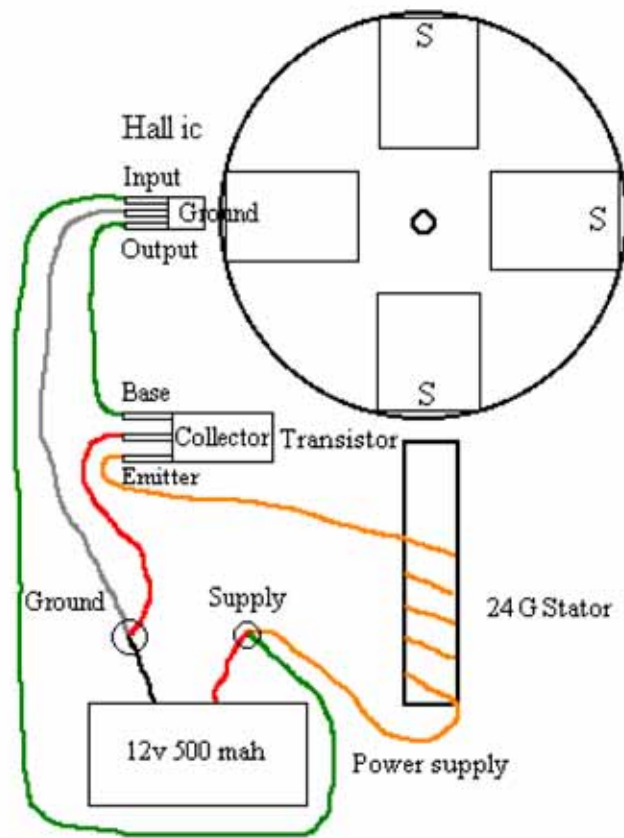
Meanwhile, for further information on the 'Adams and Cathie' projects, you'll find it all in your future issues of NEXUS."
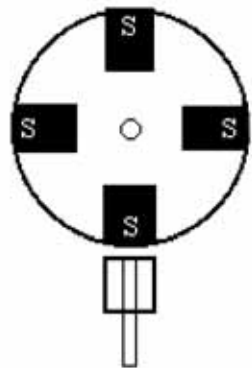

Tim Harwood's Replication of the Adams Motor-Generator
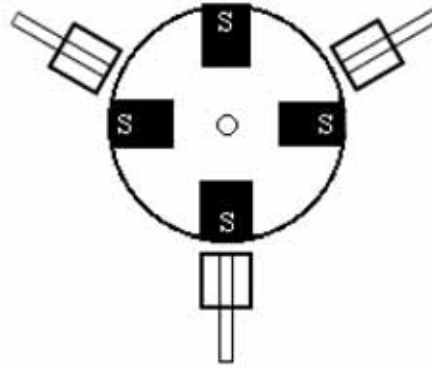**http://www.geocities.com/theadamsmotor/index.html**

Tim Harwood's CD Adams Motor (c) 2001

Design Templates For Simple Adams Motors

Initial testing layout
Hopeless with a mechanical load
S poles perform slightly better
Place Hall ic opposite stator

Suggested optimal rotor drive layout
0, 120, 240 degree stator spacing
Delivers near constant rotor torque
Stators pulsed and timed separately

Setting Stator Wind Depth - The Paper Clip Test

Permanent magnet   Paper clip

No need to over complicate this process

Take one permanent magnet, and one paperclip

Place on smooth surface, and push paper clip towards pm

Note distance at which paper clip flies into face of magnet

Repeat to verify test result

Your stator winding depth is now set

Close up of Adams Stator / Rotor Interaction

Stator windings are potentialised / precharged by field of magnet

When circuit closes charge manifested in windings is above supply

Precise geometrical use of 'Lenz gate' enables load less energy gain

Magnet's flux field becomes time reversed negentropic to restore itself

Circuitry within flux field also becomes time reversed

Photons directly convert disordered heat energy from the vacuum to potential

If field depletion is sufficient, electrons flow backwards, giving polarity reversal

The Basic Adams Motor Configuration

berth for timing
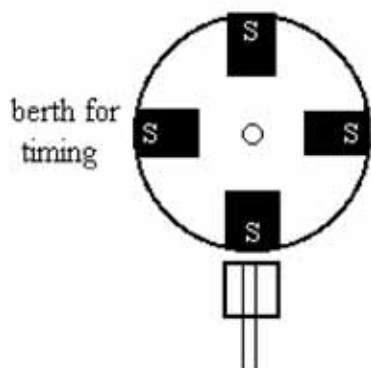
Simple ceramic / ferrite magnets are fine

9v is the first negative energy harmonic

Hence for best results I suggest 9-12v

I also find 3/8" cores are easy to work with

Which implies roughly 6/8" rotor magnets

I also found 24g wire to be easy to work with

Magnets can be all N or S poles out

I use S poles for the benefit of my Hall ic

A second stator can be added if desired
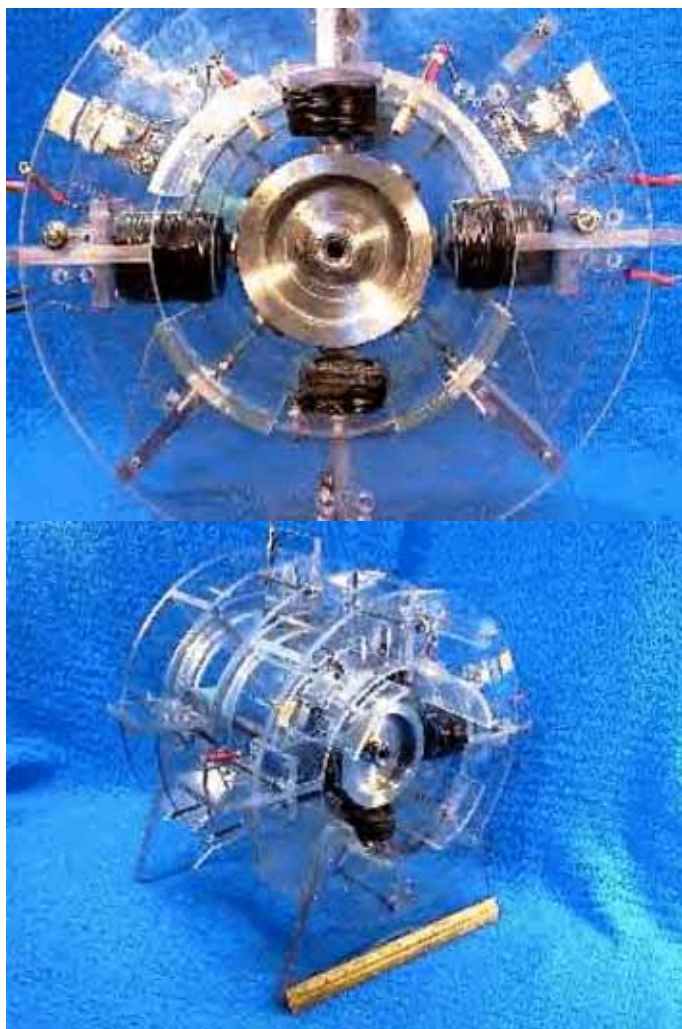
Keelynet BBS Discussions

The Adams machine was quite the topic of discussion at the April 1993 ISNE conference in Denver. It was first broken to the public attention by NEXUS magazine, published in Australia...

As to the ADAMS motor, I am a bit puzzled with the comments that gravitational energy is somehow used in the machine. From my admittedly limited understanding, it simply appears that he is using the back EMF to give additional thrust and thus a much higher efficiency.

With the use of the back EMF, there would be little if any hysteresis from the "collision" of the forward EMF with the back EMF and thus the reduction in heating.

We at KeelyNet would greatly appreciate reports from anyone reading this who might choose to build or otherwise experiment with the principle. You may upload as a text file or send a photo copy to the Vanguard Sciences address at the top of the document. Thanks.... >>> Jerry Decker

~~~~~

Date: 12 Mar 94 20:56:00 ~ From: David Galea ~ To: all ~ Subj: Adams Motor/Generator

Hello all: I am new to this echo area and I am not sure if anyone has discussed this topic before.

I have obtained plans for constructing a motor/generator from a Mr. Robert Adams in New Zealand and I have begun construction.

Seven people have since built this device in Australia and it seems to work fine, but no-one can explain the effiency anomoly that occurs after about 15 minutes of running time. In the two that I have personally seen, the eff. rating jumps from 85% (normal) then after about 15 mins goes to around 120%.

We have set up oscilloscopes, amp meters, volt meters, temp meters and can't account for the increase.

We do not have access to a magnamonitor to measure the magnetic field on the rotor, but we are still stumped.

Any ideas ? My intention is for it to be a Battery Charger.

David Galea (Melbourne Australia.)

~~~~~

There are some peculiar activities that have happened with regard to the Adams motor. As you can see from the above email, these fellows claim to know of 7 people who have successfully replicated the Adams motor.

In 1993, everyone was hot for it, wanting plans and such. Within a very short period, there was a business arrangement made with Adams which we heard was to produce a UNITY motor to be patented and sold in the U.K.

Sometime toward the end of 1993, the talk was that the Adams motor had not proven out, that no one had successfully duplicated the effect or there was some anomaly in the measurement method.

A very bizarre turnaround if you read the above email.

At the 1994 ISNE meeting, Bill McMurtry of New Zealand gave a presentation in which he said flat out that the Adams motor did not work. We took Bill to dinner with Tom Bearden and Ken McNeil, but did not have an opportunity to speak with him in detail because he and Ken had some items to discuss in private.

The collaboration of Adams with Bruce Cathie had increased the over unity output to numbers that were so incredible as to warrant not publishing them. I read something about it being on the order of 1:3000. At any rate, the Adams motor is far from dead if there have been independent successes.

New Energy News, Vol. 4, No. 8, December 1996, pp. 1-7.

The Adams & Aspden Motor Patent
by Harold Aspden

I first heard of Robert Adams and his motor at a mountain retreat west of Denver, Colorado during the days just before a New Energy Symposium. That was in April 1993. A benefactor [Bill & Lynda Beierwalts] interested in knowing the truths about "free energy" and its potential for solving the world's pollution problems had funded the expenses of the invited speakers and the preliminary "think tank" event at that retreat. My talk was about magnetism and the aether as an energy source, but our "think tank" groups each had an allocated theme. We were expected to point the finger at the best candidate for onward investigation, from the vague information and reports we had about discoveries and claims pertaining to the new energy world.

Yes, there were several to choose from, machines involving magnets and solid-state devices such as that devised by Hans Coler, dating from the World War II era, or the then-current activity of Sparky Sweet (now deceased). In fact, one of our team, a colleague from U.K., had visited Sweet just prior to that Colorado meeting. However, specific information as to how to build any of these devices was not available, nor was there any acceptable theoretical account of their operation on which we could recommend action.

Fortunately, however, someone had brought with him information publicized by the NEXUS magazine and a Manual, available from Nexus, describing a motor devised by a New Zealander named Robert Adams. "Over-Unity" performance was claimed and enough was disclosed as a blue print for replication of the machine. We did not really understand how the motor could operate quite as well as Adams had indicated, but we were convinced that "over-unity" was in prospect. Accordingly, as it seemed easy to build a motor such as Adams described, our group settled for the recommendation that the Adams motor should be looked into and somehow constructed to verify its performance.

That was how I first came to know about the Adams motor.

Collaboration with Adams ~

At that time such experimental work that I had pursued on the "free energy" theme was basically on solid-state magnetic systems and, in collaborating with a Scotsman, Scott Strachan, I had been involved with the invention of a thermoelectric device which was extremely efficient at converting low grade heat into electricity. Undoubtedly, it defied the Second Law of Thermodynamics, but that point was not stressed in those early days. That invention had proved problematic because the devices built worked for a while by repeated operation for half an hour or so at a time, day after day, for several months, but then came the inevitable progressive weakening in conversion efficiency, ending with a defunct piece of equipment.

The story on that is told between pages 124 and 128 of Jeane Manning's excellent book, *The Coming Energy Revolution - The Search for Free Energy*, ISBN 0-89529-713-2 published in 1996 by Avery Publishing Group, Garden City Park, New York.

I was distracted from that thermoelectric venture when I took a more practical interest in the magnetic reluctance motor, inspired by what we had heard about Robert Adams. I was to be distracted again towards the end of 1995 when the Correa "Abnormal Pulsed Glow Discharge" invention came to my attention, with its 5:1 over-unity feature clearly demonstrated. And now, as year-end 1996 approaches, I am destined to be distracted again, this time by having discovered myself why those thermoelectric devices mentioned above had failed. The remedy is easy as the problem does not involve deterioration. It is as if a bistable system has flipped to its off-state and just needs to be flipped back into its on-state, provided, that is, one knows what to flip!

Now, to come to the point about my collaboration with Robert Adams, I am writing these words on October 28th, 1996 and in a week from now the granted patent I have procured jointly with Robert Adams will become available from the British Patent Office in its issued form. It is Patent No. GB 2,282,708. I plan, in these pages, to introduce my own motor research and relate it to that patent and explain my connection with Adams.

I am also mindful that Adams, now recognized by an honorary doctorate from the Open International University of Sri Lanka, to become Dr. Robert George Adams, has recently published an addendum to the Adams Motor Manual entitled: "The Revelation of the Century" and has included in that work some of my written contributions.

The immediate focus of my attention, however, is a rather critical letter communication authored by Michio Kaku and sent to a programme producer of a radio station based in New York. It was dated May 20th 1996, but it is only now that I have become aware of this communication from Robert Adams' new book.

Adams need not have included Kaku's letter in his book, but he did and I commend him for it. Apart from saying that Robert Adams was either the next Einstein and Newton rolled into one or a crackpot, he made these two comments:

"Apparently, he (Adams) wants to extract energy from the aether by using rotating magnets, thereby violating the first law of thermodynamics (conservation of mass and energy). This is an ancient idea, going back centuries and was most popular in the 1880s, but was disproved by the Michelson-Morley experiment and Einstein's relativity theory. Aether, which was supposed to be a magical

substance which pervaded the universe, has never been measured in our laboratories."

"The proof is in the pudding. He (Adams) has to show a blueprint of his machines, show that they in fact generate energy, and show with a few equations how his theory works. Lacking a blueprint, a mathematical theory, and, say, video tapes of his motors generating energy from nothing, I cannot say with 100% certainty that he is wrong. (Only 99.99%)"

Now, having just had an "over-unity" motor patent granted in which I share inventorship with Adams, I will assume that those Kaku remarks are addressed also in my direction and reply accordingly, point by point.

Firstly, as a educational exercise, the extraction of energy from the aether does not violate the first law of thermodynamics. By definition or simple semantics, if you extract energy from something and move it from that something, A, into something else, B, the energy remains conserved overall. The first law of thermodynamics dates from before the time when the transmutation of mass and energy was recognized as the stellar power source by Sir James Jeans (1904). A critic might say, however, as Jeans himself did in his 1928 book EOS, that Isaac Newton knew of photosynthesis by which radiant energy transmitted through space is captured by plants and convened into matter, which stores energy by creating a combustible product. The transmutability of energy and mass was not discovered, nor was it first suggested, by Einstein. He was too late.

Secondly, the existence of the aether was not disproved by Einstein. Indeed, Einstein has not proved anything, nor has he disproved anything. One simply cannot flaunt Einstein's theory around as a reason for rejecting the prospect of an "over-unity" motor. On the contrary, ask yourself why there are plans to test Einstein's theory at a cost of $500,000,000 dollars by launching Gravity Probe B in 1999. If Einstein's theory is right, why are there any doubts warranting expenditure on that scale?

Thirdly, Kaku says the aether has never been measured in our laboratories and that its existence was disproved by the Michelson-Morley Experiment. The fact is that Michelson did not perform the experiment to test or refute the existence of the aether. He lived another 44 years after performing that experiment and believed in the aether to his dying day. He was trying to sense the Earth's motion through the aether, but, since standing waves developed by mirror reflection had not been discovered when the experiment was planned, he had not allowed for that to affect the result observed. In fact, the aether energy stored in those standing waves, being trapped in the mirror system, makes the wave motion appear to be locked to the frame of reference of the mirrors, and not the aether as expected. The aether certainly was detected in the laboratory when Michelson found he could detect the Earth's rotation relative to that non-rotating aether by his light wave interference experiments jointly with Gale in 1925.

The aether was detected some years earlier by Sagnac in France and is detected in modern navigation technology by the ring laser gyro. How can the speed of a laser beam traveling around a closed path inside an optical instrument detect rotation of that instrument if the beam is not keeping a fixed speed relative to something inside that instrument that does not share its rotation? That something is the aether! No amount of book learning or mathematics can avoid that simple truth, and even though the word aether is seen as something magical, it is that something that delivers free energy once we have decoded the combination of the magnetic lock which restrains its release.

Note also, that the aether reveals its existence when we have rotation and we have rotation in the Adams motor.

Fourthly, as to Kaku's pudding, which comes first, the chicken or the egg, the blueprint and the working machine, or the theory and the equations? Though we have no answer to this question of priority, we know there are chickens and we know there are eggs, so it really does not matter which comes first. Certainly, it seems, that in order for Kaku to decide whether free energy is possible, albeit with only 0.01% chance, there has to be a theory, a machine and an aether.

It is for this very reason that I have made special effort during 1996 and published my book Aether Science Papers as a forerunner of the Energy Science Report describing my own "free energy" motor research. This Report No. 9 in the series is entitled Over-Unity Motor Design and its date of publication is November 6th 1996, two days before the first disclosure of details of my machine at a New Energy symposium held in Rotterdam in The Netherlands.

The formal electrical engineering theory explaining the motor operation in tapping "free energy" is contained in a few pages in the Energy Science Report #9. The motor design is described and a photograph of the machine is included. Moreover there is an outline blueprint that indicates the design of the multi-megawatt versions of the machine. However, as to the ether, or 'aether,' to use my normal terminology, describing that in full detail needs more than a few pages for scientific proof and, as Kaku well realizes, the wisdom needed exceeds the talents of even an Einstein or a Newton.

About the Aether ~

I will digress here, just for a moment, before getting back to Robert Adams and the subject of the Adams-Aspden patent. My reason is another comment made by Kaku in that quoted communication. He asserted as a conclusion:

"Inventors want to solicit money from investors, so I have a moral obligation to say exactly what I think about issues that, at some point, may hurt people."

Now that is a very poor reason for attacking someone's lifelong efforts to probe the secrets of science with a view to advancing both knowledge and technology beneficial to mankind. The facts of life are that it is investors who want to solicit money by making profit from the creative endeavors of inventors. Invariably, inventors get hurt anyway, without some well-meaning individual doing his moral duty by hurting the inventor more by unwarranted criticism. Is it really a moral obligation to preach the gospel of Einstein's theory in contending that investors should steer clear of Robert Adams, when his only thought is to have his efforts recognized?

Of course, by the nature of things, the free-lance inventor can go adrift in a technical sense and then, if ensnared by those investors, he can be carried off into obscurity by a tidal wave of turmoil. Meanwhile the orthodox scientific establishment stands by and watches, mildly amused at the futile efforts of the free-lance inventor who ventures beyond the level of gimmicks for use in the household and garden. That is the way it is.

As to my book Aether Science Papers, it shows how so much of vital importance, explained by

neither Einstein's theory nor quantum theory, has a straightforward answer. Just as Robert Adams in New Zealand and I in England sit poles apart on this our Earth, yet we are governed by the same laws of physics and subject to the same constants of physics. Body Earth is our common rotating frame of reference, but body Earth does not explain why those physical constants are, so far we know, universal. We take that for granted, just as our forebears took for granted the fact that they all inhabited the same aether. Our modernist society and its Einstein enthusiasts tell us there is no aether and so, Robert, you are on your own and only God can tell you why your experiments would work as well in England as they do in New Zealand!

You might then wonder why scientists at the U.S. Bureau of Standards, at the National Physical Laboratory in England and at the equivalent CSIRO National Measurement Laboratory in Australia bother to measure the same physical constants to very high precision. Give or take a fraction of a part in a million attributable to experimental error, they always come out the same. Surely, that is because the aether spreads through all those locations and has the same structure everywhere. What do I mean by structure? Well, you need to look up the paper in Physics Letters, 41A, 423-424 (1972), entitled "Aether Theory and the Fine Structure Constant" to find the answer. That paper emerged from the Australian CSIRO laboratory just mentioned. It shows how alpha, the most basic dimensionless constant in quantum theory, is derived by aether theory to give:

1/alpha = 108 Pi SQRT(2) N**(-1/6)

and how N is found to have the lowest cell energy if N is 1843. This gives 1/a;pha as 137.0359, correct to part per million precision in comparison with its measurement at any of those laboratories. If there were no aether, then you might as well think of a number and try that, though it would be your ghost that makes that effort because you would no longer exist.

Of course, there will be the Kaku's of this world who say that the above formula is mere number play, contrived to fit known results. Well, that may be true for Einstein's "1,2,3" theory, but it certainly is untrue for the aether theory. You see, all Einstein did by the disguised mathematics of his General Theory of Relativity was to say (1) that the spectral redshift was the same as that evident by use of Newtonian theory, given that energy gravitates, (2) that light beams grazing past stars are deflected by twice the amount expected from Newtonian theory and (3) that planets describe orbits around the sun as if the planet's motion-dependent attraction is three times stronger than the value predicted by classical theory. It is so easy to contrive a theory for a 2 and a 3 factor. A German schoolmaster Paul Gerber had, in 1898, 18 years ahead of Einstein, presented a theory for the '3' factor, based on the speed-of-light propagation of gravity across space, but that was not mentioned by Einstein. The factor of 3 arises because the energy transfer between sun and planet is not confined to a pencil thin line drawn between sun and planet, but rather fans out as it transfers to the aether field and then converges on its target after taking more time over the longer route.

Einstein's theory is sterile. It offers no physical insight into the truths of the role played by the aether. It cannot explain the 137.0359 that governs quantum theory and, even on its own territory, it cannot explain the dimensionless constant involving G, the constant of gravity, nor, indeed, can it explain the unifying link between electrodynamics and gravitation!

So, Robert out there in New Zealand, take note that you are in a part of the universe where the aether has the energy state corresponding to N having the value 1843! Note that I first discovered

the formula long ago in the 1950s using an engineer's slide rule, backed up by logarithmic tables for higher precision.

Take further note that, years after that 1972 paper was published, a famous astronomer in USA (Tifft), discovered that distant galaxies closely paired or in small groups exhibited differences in red shift. The differences were always multiples of 72.5 km/s in relation to the speed of light. Explaining this is a complete mystery. Why should Planck's radiation constant be different from one galaxy to the next? Well, if you, the reader, were to study my aether theory, you could work out that, since aether energy density throughout space has to be uniform on a universal scale, the spectral emission frequency of a radiating atom will vary in proportion to $N^{**(4/9)}$. It varies as $alpha^{**2}$ and also by a further cube root of this factor, which gives the power 4/9.

Now take 1843 as the base value of N and decrease it in steps as you look for higher energy per unit cell states in different galactic regions. You will find that the result is the 72.5 km/s observed by Tifft. Check that by calculating 4c/9N as N decreases from 1843 to 1828, c being the speed of light. Check the Tifft paper to verify what I say: W.G. Tifft, Astronomical Journal, 211, 31-46 (1977). You will see his comment that he could find no evidence of gravitational interaction between those adjacent galaxies! So, what has happened to Einstein's theory. It requires universal gravitation with each of you being an individual observer at the center of your own universe. I would rather believe in the aether, knowing that there is proof of its reality, and devote my efforts to tapping some of its store of energy to safeguard the future of mankind from unnecessary pollution.

The Adams Motor and the Adams-Aspden Patent ~

I have not built an Adams motor as described in his Manual. I do know that when I returned to Denver in May 1994 for the New Energy Symposium there were machines on show or described in the Proceedings which purported to be Adams motors but they did not perform over-unity. It was reported that one such machine came very close to being 100% efficient. Adams did not attend that meeting. However, in the intervening year I had struck up a contact with Adams. I found he was under the impression that such machines are unpatentable and I had skills in the patent field as well as knowledge about the physics governing the operation of motors and magnetism generally. In fact, I already had a granted US patent for a motor designed for over-unity operation, but never built [US Patent 4,975,608]. Adams had possession of motors which he claimed had the over-unity performance. I had, at the Denver 1993 meeting, declared my belief that over-unity motors were possible and supported the plan to explore the Adams machine.

My distant association with Adams resulted in an exchange of technical information and the proposal to adapt the design of his motor in a novel way. His motor had open-ended magnetic stators and magnets in a single plane forming radial arms. The invention, we jointly devised, placed the magnets axially parallel with the rotor shaft, fitted two sets of toothed rotor pieces and made the stators into bridging yokes. The resulting configuration was of the form shown in Fig. 1, taken from the patent specification that we filed in U.K.

The machine has to work over-unity, if properly designed, because the magnetic flux switching assures that much of the flux across the pole gaps is diverted, as the poles separate, so that it still links the magnetizing windings but finds a return closure path sideways from the rotor pieces and so exerts no braking action on the motor. The magnets provide the drive torque pulling the poles into

register when no current is applied to the windings.

Fig. 1. (shows the components, numbers 12 - 18)

The input of current drives the flux from the stator bridging yokes and forces it into the lateral route as the poles separate.

There can be no input of inductive power by the magnetizing winding if there is no change of net flux linkage. It will change to some degree but, if the design were perfect, then the machine could run on negligible inductive power input. That leaves normal resistance loss and some magnetization loss, much of which can be reduced by making the machine larger and more powerful. A small machine could prove the principle, especially if we allowed for the heat generated in the windings and explored the overall energy situation to see if we really are tapping energy from the aether.

The patent application was filed on 30th September 1993. I named myself and Adams as joint applicants and joint inventors. It has now been granted, as already stated. However, in May 1994, during the early days of its patent pendency, I encountered the reaction of those in Denver who had been unable to confirm "over-unity" operability of the Adams motor. I saw our patent application as offering an improved design, but there were clouds developing and Adams was facing the problem of defending his position. As background also there was the rumor about rival Japanese motors and, as things developed, I heard of claims for a machine constructed in Hawaii that indicated over-unity operation and could, for all I knew, be quite similar to the one covered by the Adams-Aspden patent application.

I was not too sure how Robert Adams was measuring his energy input and his energy output, so I could not vouch for his performance claims and, indeed, Robert was careful about the information he did disclose. When I heard he was adopting calorific measurement to verify the output energy, which would include heat generated in windings as well as magnetization loss, then 1 felt we were on track towards confirming the performance rating. I still wonder about the measurement of input power, having regard to the pulsed form of the current, and I am not reassured by the reference to the communication from the Group Research Center of Joseph Lucas Ltd which Robert includes in his new book *The Revelation of the Century*.

That said, however, going back to that 1994 period, I felt I had to take more initiative myself and so I decided to ask the U.K. Department of Trade and Industry to consider my application in a competition for an award of research funding based on a meritorious invention proposal. I offered something new, based on a new patent application, and backed by the patent cover I already had from my U.K. patent corresponding to the US patent already mentioned. In August 1994, though I was 66 years of age, I won that award and had 75% of research costs covered by the U.K. government. In the event that funding carried my motor research through to year-end 1995.

I did not build the specific form of machine shown in Fig. 1, but instead constructed a motor that was designed to contain the magnetic flux more effectively within what became a single all embracing magnetizing winding enclosing the whole motor. This is the basis of my own initiative on the "over-unity" machine and, as the U.K. patent specification on this new machine is to be published early in December 1996, I am now releasing information by publication on November 6th of my Energy Science Report No. 9 entitled "Power from Magnetism: Over-Unity Motor Design."

Figure 12 of that Report, backed by design detail, shows how the over-unity factor is determined and I reproduce that figure below as Fig. 2.

Fig. 2 (Plot of B vs. H)

Without going into full details, note that the diagram is an idealization of a B-H magnetization curve. It has a linear B-H relationship drawn through the origin O but at high flux density levels the curve bends over as it creeps towards saturation and the slope of the curve drops. The areas a, b, c and d, respectively, represent energy density input in energizing the magnetic system. The areas a and b apply for low flux range magnetization over the lower part of the curve. The areas c and d apply to flux changes confined to the upper region. Areas a and c are energy inputs from the magnetizing winding, whereas c and d are energy inputs that electrical engineers never consider, because that energy is supplied by the aether.

Where does the energy go? That is an interesting question fully explained in my Report, but the answer, simply, is that it is pooled by being shared equally between the space occupied by the ferromagnetic core and the space taken up by the air gaps in the core. That energy in the air gaps, or pole gaps in the motor, provides the mechanical drive.

So, you can see for yourself that, if you run the motor over the lower flux density range, which is normal, then you operate at an efficiency which cannot exceed (a+b)/2a, which is 100%. On the other hand, if the motor operates over the higher range, the efficiency can reach up to (c+d)/2c, which is very much higher than 100%!

Consider some realistic figures by putting the knee in the curve at 15,000 gauss and assuming that the incremental B/H ratio is 1000 over the lower range but only 50 over the upper range. Operate the stator core of the motor up to a B value of 20,000. H ranges from 15 to 115 over this upper range. Work out the area c as being (15 + 115) x 5000/2 or 325,000 and the area d as being (15,000 + 20,000) x 100/2 or 1,750,000. You will then see that operation close to 319% efficiency is indicated!

Be less ambitious in power output terms and run the motor over an upper range between 15,000 and 17,000 gauss, to find that area c is (15 + 55) x 2000/2 or 70,000 and the area d is (15,000 + 17,000) x 40/2 which is 640,000. (c+d)/2c is then 507%!

If the aether delivers energy on loan to you and you use it to run the motor as the poles come together but refuse to give it back, then the aether has to replenish itself by taking power from its own vast pool of energy activity. It merely ripples to find a new level of equilibrium just as the sea will recover if you take a bucket of water from it. Eventually, that energy borrowed finds its way back to the aether as we spend it by generating heat radiation.

[*Boxed Text:*] "If you do not believe what I say, then wait and watch the progress as those who believe, be it Robert Adams or whoever, decide to build a magnetic reluctance motor heeding the design principlpes I have recorded in my Report." [*End Boxed Text*]

As a final note I will echo one message which I have independently mentioned in my Report No. 7 (the Report used to brief the U.K. Department of Trade and Industry on my Award progress). It is

that magnetic reluctance motors already being manufactured that are said to be 80% or 90% (or even 96% efficient as I now see reported on page 21 of the U.K. Institution of Mechanical Engineers 16 October 1996 issue of Professional Engineering) are already trespassing upon forbidden territory. That level of efficiency is either a false claim or the motors are already regenerating power from heat dissipated as loss.

Alternative Energy Institute (July 17, 2002) ~ **www.altenergy.org/news/newsletter79/copy79/copy79.html**

Adams' Invention Poached Down Under

According to a recent article published by an Australian newspaper, two Australian inventors have developed the world's "first commercial machine which can power a house from a clean, green virtually free energy source." The story has been posted on the Aethmogen Technologies: New Energy Scientists website "for those interested in the subject of reverse engineering, plagiarism, and stolen intellectual and other property." In response to the anticipated production of the "Lutec 1000 Motor/Generator," noted Australian inventor Dr. Robert Adams reports background details to enforce his argument that this magnetic motor cannot be patented. Adam's writes, "This invention, which is mine, was granted a British Patent in 1996 along with Dr. Harold Aspden of the United Kingdom (IBM's Patent Director for 19 years), was placed in the public domain by international publication in Nexus Magazine and according to International Patent law, thenceforth becomes unpatentable!" Learn more about this unfolding drama from Down Under.

Biodata of Dr Robert Adams

Doctor of Science (Hon).
The Ancient Royal Assyrian Order of Merit.
Founder of the New Zealand Section of the Institute of Electracial and Electronic Engineers Inc., New York (I.E.E.E) 29.5.1968
Elected Chairman of Region 10, N.Z.I.E.E.E. (1969 and 1970).
Elected Fellow of the New Zealand Electronics Institute 1969.
Mumber of Auckland Institute and Museum.
Member of The Scientific and Medical Network, U.K.
Member of New Zealand Electrical Institute Inc.
Member of Royal Society of New Zealand.
1969 - Invented the Adams Switched Reluctance Motor Generator
1975 - Discoverer of the Impulse method of charging batteries
1993 - Discovered a procedure to engineer magnetic polarity reversal
1995 - Invented the Adams Super Power Four Pole Permanent Magnet
1996 - Invented the Mark 024 Thermo Switched Reluctance Motor which resulted in the discovery of anomalous unforseen massive heat energy in addition to electric power generation

Current and Immediate Past Position ~ Involved in research and development of the Adams Super

Power Thermo Impulse Salient Pole Open Magnetic Circuit Reluctance Electric Motor/Generator which incorporates the development of the science and technology involved in the hornessing of aether energy via electromagnetics.
Other Interests and Research:

Seismology and alternative medicine, together with Dr Wilhelm Reich's and Dr Ruth Drown's biophysics.
Interests and Concerns

Surround the imperative requisite that mankind cease and desist confounding the balance of his planet's ecology and focus with urgency upon the sources of clean energy which surrounds him at all times and is free for the taking. Pollution is now unnecessary, as is the wanton destruction of rain forests, waterways and our oceans. Concentration on the pollution of the human body and a reversal to natural medicine accompanied by a sane diet might perhaps be the best first step.
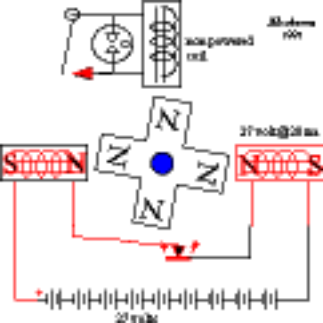

Dr Robert Adams

Top ~ **Home**
rexresearch.com

ADJUST GENERATOR STATOR WINDINGS
FOR OPTIMUM OUTPUT.

AMMETER

A

GENERATOR STATOR
WINDINGS

45°

25°

N

Z

Z

DRIVE WINDING

D.C. IN FROM STAR WHEEL
COMMUTATOR

SW

ROTOR

LOAD
R

DRIVE WINDING

N

NOTES

TD-102A	ADAMS PERMANENT MAGNET ELECTRIC D.C. MOTOR GENERATOR.	DATE	19th OCTOBER 1972

DATE	19th OCTOBER 1972
SCALE	APPROX ½
TOLERENCE	
QUANTITY	

GENERAL TEST SETUP (GENERATOR)

MATERIAL	
DESIGNED BY	ROBERT G. ADAMS
DRAWN BY	JOHN D. A. MARTIN

interrupted coil

N

N N

N

27 volts@20ma

S N N N N S

+ ‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖

27 volts

Tariel KAPANADZE

Over-Unity Electric

Videos --

http://www.youtube.com/watch?v=wV560xfYSJ0

http://www.youtube.com/watch?v=90W00Yt_PLk

http://www.youtube.com/watch?v=YxFgAfSXNt8

http://www.youtube.com/watch?v=Be1H0aq5Iyc

http://www.youtube.com/watch?v=Mxa_G4X8Y7k

http://www.youtube.com/watch?v=W-7RfEF-2WI

http://www.overunity.com/index.php?topic=7679
(June 27, 2009)

Self-running Free Energy Devices up to 5 KW from Tariel Kapanadze

Forcethetruth posted this video on Youtube that he got from a torrent somewhere:

http://www.youtube.com/watch?v=Mxa_G4X8Y7k

There are 7 parts to this video but the guys are lighting 5 large Edison based lightbulbs from a radiator buried in the ground, a wire to a water pipe, a Tesla coil/joule thief, a spark gap, and some other unidentified components.

We started discussing this in the Joule Thief topic but I wanted to give this its own area for discussion. We are looking for folks to help translate the narration in these videos.

These are well worth watching even not knowing the language spoken. It is really something to see. The other 6 parts of the video can be found on youtube in the sidebar on the right of the video. If someone wants me to post links to all of them here, I will.

Bill

See also :

http://peswiki.com/index.php/Directory:Kapanadze_Free_Energy_Generator

---

**http://v3.espacenet.com/publicationDetails/biblio?
DB=EPODOC&adjacent=true&locale=en_EP&FT=D&date=20080828&CC=WO&NR=2008103130A1&KC=A1**

WO 2008/103130

Energy Transformer

Abstract -- Energy transformer being improved with this invention, transforms the initial electric energy received from an independent power supply (1, 2, 2A) and comprises the following parts: - First part consists of an accumulator or chargeable battery, or an inverter or network or any other power supply (1, 2 and 2A) to provide the input energy to the system, - Second part consists of power switch (3), frequency generator (4), capacitor (5), first filter (6), and primary coil (7), - Third part consists of secondary coil (8), current amplifier (9), second filter (10), frequency adjuster (11) and phase stabilizer (12) and load (13), and - The cables (14 and 15) which connect the output (13) on the secondary side to the power switch (3).

Background of the Invention

The present invention is related with an economic energy transformer, which primes the constant electric energy received from any pwoer supply via transferring the electromagnetic field occurred at one of the bobbins to other bobbin, rhytmically stabilizing the magnetic field between the bobbins with the help of amplifier immobilizes the energy voltage in both bobbins, increasing the current with respect to the input current.

Prior Art About The Invention

There is not encountered any application in prior art related with the invention improved with this invention.

Aims for Development of the Invention

The economical energy transformer improved with this invention aims to receive a constant energy and fixing the voltage of this energy, increase the current value, in other words to produce more amount of energy than the received energy.

General Description of the Invention

The key feature of the economical energy transformer improved with this invention is to receive the electric energy having constant voltage and current value and emit this energy with constant voltage but higher current value. This device can also feed the initial power supply.

The economical energy transformer improved with this invention has to receive energy from a power supply constantly. This mentioned energy can be easily generated from a small accumulator or chargeable battery or an inverter or a network or any similar power supply.

The economical energy transformer improved increasingly emits the energy that is received constantly.

Description of the Figures

The figures prepared for a better explanation of the economical energy transformer improved with this invention are disclosed. Description of the figures is as follows;

Figure 1 -- The view of circuit chart of the economical energy transformer.
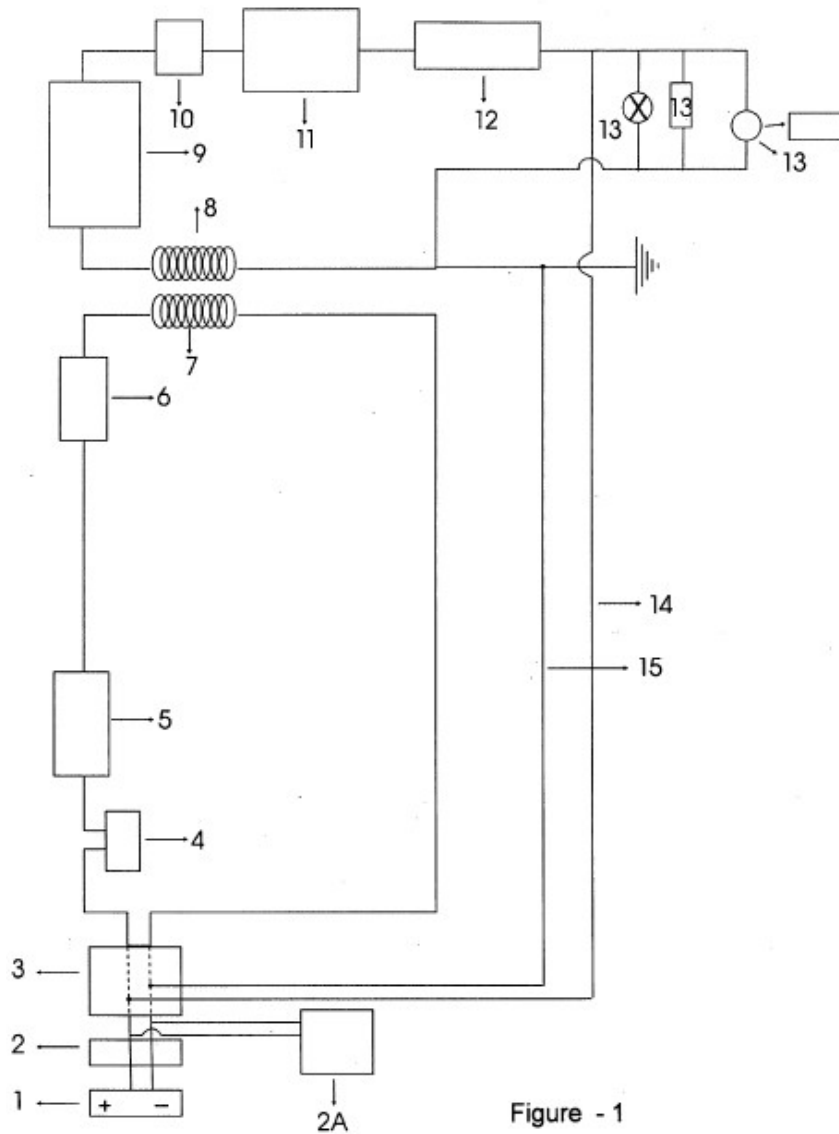
Figure - 1

Definition of the Components (Parts-Features) on the Figures

The parts shown on the figures are numbered individually for a better explanation of the economical energy transformer improved with this invention. Explanation of each part (feature) numbered is given as follows;

1, 2, and 2A -- Initial energy (Battery, inverter, city network, accumulator, etc., depending on the initial power supply.)

3 -- Power switch

4 -- Main Board

5 -- Capacitor

6 -- First filter

7 -- First bobbin

8 -- Second bobbin

9 -- Current Amplifier

10 -- Second filter

11 -- Frequency Adjuster

12 -- Stabilizer (phase)

13 -- Output (load)

14 and 15 -- Energy cables to feed the first circuit with the energy generated.

Description of the Invention

The economical energy transformer improved with this invention includes 4 main part inside;

First Part consists of an accumulator or chargeable battery, or an inverter or network or any other power supply (1, 2, and 2A) to provide the input energy to the system.

Second part consists of power switch (3), main board (4), capacitor (5), first filter (6), and first bobbin (7).

Third part of second bobbin (8), current amplifier (9), second filter (10), frequency adjuster (11) and stabilizer (phase) 912) and output (load) adjuster (13).

And the fourth part consists of the cables (14 and 15) which provide the energy generated to be transferred to the first part and by this way feeds the input power supply where necessary.

Second part is designed to transfer the electric energy -- which is received from the independent power supply at the first part- and electromagnetic field -- which is occurred at the first bobbin (7) -- to the second bobbin (8).

And at the third part, due to the high magnetic field received from the first bobbin (7) there occurs a difference between the bobbins and this difference occurred between the second bobbin (8) and first bobbin (7) is increased by the current amplifier (9) at this part.

Through the energy cables (14 and 15) connected to the output (load)(13) of the economical energy transformer improved with this invention and feeding the first circuit, the device feeds itself by using some part of the energy it generated.

The present invention is designed as single phase and it is possible to increase the number of the phases at maximum three phase. It is possible to generate energy at any desired power value. Depending on the electric energy value (power), the capacities of the parts used in the device shall be increased symmetrically.

The energy to feed the system is received from an accumulator or chargeable battery, or an inverter or network or any other power supply (1, 2 and 2A). This energy input has a constant voltage and current value.

Opening the power switch (3), the user gives the electric energy received from the initial energy (1, 2, 2A) to the first second part. being loaded with the electric energy received from the energy supply (1, 2, 2A) the capacitor (5) serves as a pump, and provides the main board (4) to give electric to the system.

Main Board (4) transfers the high amount of frequency it generated to the first filter (6). First filter (6) stabilizes the frequency received from the main board (4) and regularly transfers to the first bobbin (7).

Creating a magnetic field around itself with the high frequency regularly received from the first filter (6); first bobbin (7) transfers it to the second bobbin (8).

Subsequently, following the system, high frequency passing from the first bobbin (7) passes to the current amplifier (9). Second filter (10) transfers the high frequency received to the high frequency adjuster (11). The energy emitted from this part passes to the stabilizer (12) and the relevant unit stabilizes the received high frequency in accordance with the need and arranges without causing any harm to the parts at its exit. Some part of the energy generated by the device is used to feed the energy cables (14 and 15) feeding the first circuit and the power supply where this power supply needs to be recharged.

WO 2008 / 103129

Independent Energy Device

Abstract -- The independent energy device improved with this invention, starts operation with the initial electric energy received from the initial energy supply (15) and afterwards generates energy consistently and is characterized to include power switch (1), capacitor (2), points (3), high frequency generator (4), first filter (5), first bobbin (6), first frequency adjuster (7), second filter (8), frequency stabilizer (adjuster) (9), second bobbin (10), second frequency adjuster (11), exit (phase) (positive) (12), positive self feeding cable (12a), exit (neutral) (13), negative self feeding cable (13a), neutral (grounding) (14), initial power supply (15).

Description of the Invention

The present invention is a device both self sufficient (self-feeding) and producing ready to use electric energy, starts to operate with the initial electrical energy received from accumulator or similar source of energy, transferring the magnetic field generated in first bobbin to second bobbin through a frequency stabilizer, after rhythmically stabilizing the magnetic field occurred between the bobbons; converts the independent energy -- received by the second bobbin from the air -- to electric energy.

Today electric energy can be generated by using various kinds of technologies. in order to summarize some of them; electric energy can be generated through dams, from the motion of waves, by nuclear power plants, by using solar energy, fuel oil, hydroelectric power plants and similar areas through using various technologies. There are different advantages and disadvantages among these various techniques used for generating electric energy. The general purpose of all these techniques is to generate energy cheaper and faster by providing high efficiency.

The present invention is improved through using different technologies of today, by less costly way and without harming the nature, and using a very different technique from the above mentioned (present techniques used today).

The present invention receives energy externally only at first starting phase. This mentioned energy can be easily generated from a small accumulator or chargeable battery or similar sources. 1-2 seconds after the device is started, the power switch at the energy input of the device cuts the external electric (from

accumulator or similar source of energy) off by generating electric energy. A very small part of this electric energy generated is used by the device to feed itself and the most part is discharged ready to be used. As long as the device is not shut down or no problem occurred inside, the device generates energy consistently. By recent technology, there is no device similar to the present invention producing energy consistently by feeding itself.

In order to maintain the device to generate electric energy consistently, two circuits are designed inside the device.

First circuit, consists of time relay switch, capacitor, points, high frequency generator, first filter, first bobbin, first frequency adjuster (this circuit is displayed with bold line in the figure).

Second circuit; consists of second filter, frequency stabilizer, second bobbin, second frequency adjuster.

First circuit is designed for generating electricity by transferring the electromagnetic field occurred at the first bobbin with the electric energy received from the independent initial power supply, to second bobbin. And as the second circuit; Due to the high magnetic field received from the first bobbin, there occurs a magnetic field difference between the bobbins. The magnetic field difference occurred between the second bobbin and first bobbin stabilized by the help of frequency stabilizer, this circuit lione also converts the energy which is moving independently in the air at the second bobbin designed within this line to electric energy. This electric energy formed by the second bobbin adjusts the necessary frequency (220 V - 50 Hz or 110 V - 60 hz) for use, by the help of second frequency adjuster designed at the bobbin output. This generated electric energy is transferred to the intended usage area via exit points. Through the circuit cables connected to the exit points, the device feeds itself with teh generated electric energy. This mentioned process eventuates 1-2 seconds after the device is started. After this process, the time relay power switch designed at the input of the device breaks the initial power supply. After this stage, the device generates the energy independently.

The present invention is designed as single phase and as the phase number is desires to be increased, the bobbin number shall also be increased for each phase. Depending on the number of bobbins, the capacities of other parts used in the device are increased symmetrically.

It is possible to obtain energy in desired amounts of KW from the device. it is necessary to increase the capacity of the parts depending on the value of the electric energy.

The figures related to the invention are given enclosed, from the related figures:

Figure 1 -- Schematic view of the present invention.
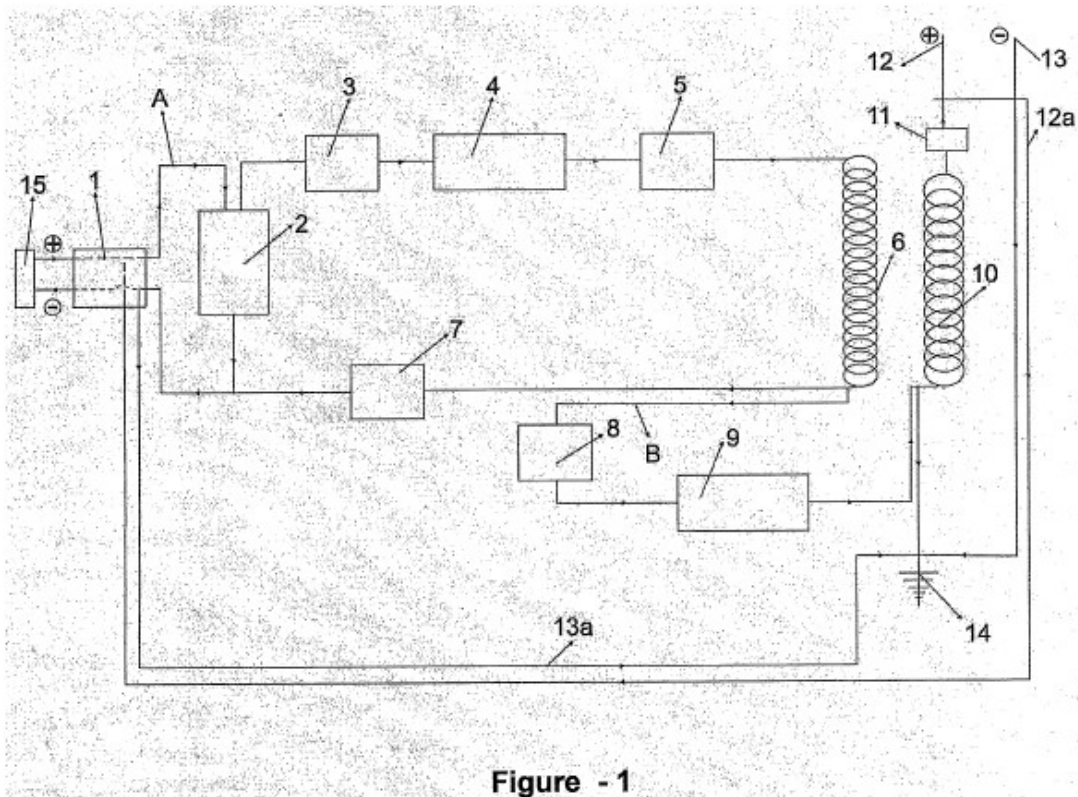
Figure - 1

The parts related to the invention are given numbers and the explanations corresponding to these numbers are as follows:

1 -- Power switch

2 -- Capacitor

3 -- Points (as distributor of an engine)

4 -- High frequency generator

5 -- First filter

6 -- First bobbin

7 -- First frequency adjuster

8 -- Second filter

9 -- Frequency stabilizer (adjuster)

10 -- Second bobbin

11 -- Second frequency adjuster

12 -- Exit (phase) (positive)

13 -- Exit (neutral)

13a -- Negative transformation cable

14 -- Neutral (ground)

15 -- Initial power supply

A -- First circuit cable

B -- Second circuit cable

The operation of the present device is explained as below, giving reference to the parts numbers through the figure enclosed.

Energy and Frequency Circuit on the First Circuit (A)

Opening the power switch, the user gives the electric energy received from the initial energy supply (15) to the first circuit cable (A). Being loaded with the electric energy received from the energy supply (15) the capacitor (2) serves as a pump, and provides the points (3) to give electricity to the high frequency generator (4). High frequency generator (4) transfers the high amount of frequency it generated to the first filter (5). First filter (5) stabilizes the frequency received from the high frequency generator (4) and regularly transfers to the first bobbin (6). Creating a magnetic field around itself with the high frequency regularly received from the first filter (5); first bobbin (6) transfers it to the second bobbin (10). Subsequently, following the first circuit cable (A), the high frequency passing from the first bobbin (6) passes to the first frequency adjuster (7). The first frequency adjuster (7) stabilizes the received high frequency in accordance with the need and arranges without causeing any harm to the parts at its exit.

Energy and Frequency Circuit on the Second Circuit (B)

The high frequency rising from the first bobbin (6) enters the second filter through the second circuit (B). Second filter (8) transfers the frequency received from the first bobbin (6) to the frequency stabilizer (9). The electromagnetic fields occurring at the bobbins (6, 10) are different and the magnetic field at the first bobbin (6) is higher than the second bobbin (10). At this stage the frequency stabilizer (9) stabilises the different electromagnetic fields occuring at the first and second bobbins (6, 10). This stabilized high frequency exits from the second bobbin (10) and is adjusted for the required (necessary for the use) frequency degree by the help of the second frequency adjuster (11). The user uses the electric energy generated in the device by the help of exit (phase) (positive) (12) and exit (neutral) cable (13).

The positive transformation cable (12A) at the exit of the device and the negative transformation cable (13A) are connected to the power switch. 1-2 seconds after the device starts to generate electricity, the electric energy generated is transmitted to the power switch (1) via positive transformation cable (12A) and negative transformation cable (13A). The time relay at the power switch (1) breaks the energy received from the initial power supply (15). After this stage, the device continues to generate electric energy feeding itself with the self-generated energy and independently without depending on any energy from outside. The device continues to generate unlimited energy as long as it is not closed via the power switch (1) or no problem occurs within the system.

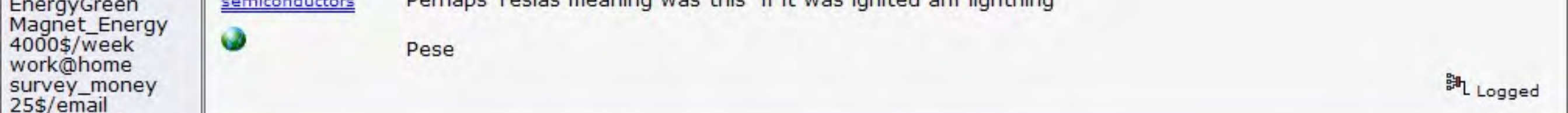Your Support Maintains this Service -- and Your Survival ...

The Rex Research Civilization Kit

Welcome, Guest

Please login or register.

Free Energy Alternative ZeroPoint Green Tesla Power Open Source Research Forum OverUnity.com › Forum › Electronic solid states setups › Tesla technology › Tesla's Magnifying Transmitter (amplify electricity)

Pages: 1 ... 14 15 16 17 18 [19]   Go Down

Tesla's Magnifying Transmitter (amplify electricity) (Read 101172 times)

Tito L. — Re: Tesla's Magnifying Transmitter (amplify electricity)

No, I'm not kidding. You can apply for a patent on anything. If it gets approved is another thing. So tell me, If he is not going to patent it and he's not going to share it, what is this thread about?

---

ramset — Re: Tesla's Magnifying Transmitter (amplify electricity)
« Reply #273 on: February 07, 2010, 04:30:25 AM »

Tito

For a long time I remember you doing the same thing.

I am hoping more people get the "BALLS" to share what to obviously all over this forum and some others

Tick Tock Tick Tock.........

Chet

---

ramset — Re: Tesla's Magnifying Transmitter (amplify electricity)

It is interesting that Tesla reports that a rarified gas acts as a conductor for hv lf power. Elevated terminals and all. I dare say that vacuum tube inferia conducting abilities to charge information while dense media has a diffusion problem. Perhaps Tesla was going to transmit gravity waves which can flow between stratified layers of different density stuff.

---

sparks — Re: Tesla's Magnifying Transmitter (amplify electricity)

---

pese — Re: Tesla's Magnifying Transmitter (amplify electricity)

I have seen this too and wondered.
But if this gas (such as xenon "in a PhotoFlasher")
or Nth vapor lamp has ignited, it will be very low impedance,
and resistive.)
Perhaps Teslas meaning was this if it was ignited and lightning

Pese

---

pese — Re: Tesla's Magnifying Transmitter (amplify electricity)

Emco High Voltage Corp.
Miniature, High Performance, High
http://www.nt0a.org/noya-book/metaphysics_revelations.htm

---

forest — Re: Tesla's Magnifying Transmitter (amplify electricity)

Tesla coil = heat pump for ambient electricity

Tito L. — Re: Tesla's Magnifying Transmitter (amplify electricity)

Hi everyone good day

Tesla discover and recorded an electrical impulse of unknown origin and so that was the time a magnifying transmitter become obsolete to him in.

Then he tried to make his electric car and study the technique of not using the earth ground as ground ok.

The universe and our earth with perfectivity. therefore we should always conclude that there is always a better way to make thing works perfectly ok.

there is always atleast one sure way I.

Sometimes we are concentrating to the deepest knowledge of the device but we are leaving some basic foundation which is the important one to study and gives some other door for a very much high technology better and deeper than the first movement.

tito L. mercado

best regards

Magluvin — Re: Tesla's Magnifying Transmitter (amplify electricity)

Sometimes I feel like I am searching for something that isnt there. I build these lil machines and circuits and change parameters and values, and when I see something that makes me think of something and feel good, its my excitement I continue and find that it just about every case, I am using more energy than Im trying to produce. I read a lot of material, and everything seems to be a clue at the most moment. None of it actually adds up. But if it were the key and discovery of magnetics and electronics but anytime that just draining my batteries and time. Im tired. Im going to take a break for a while.

Mag

---

bananutisgo — Re: Tesla's Magnifying Transmitter (amplify electricity)

Regarding, ground....

I have made some time ago a barber, per reason winding, a solid state Tesla coil like apparatus that produced sparks over a wire 2-3 long. I was absolutely interested in the measurement (40 % max) and repeatedly discovered and on a solid data to me that ground provides at the mf currents a suitable reservoir for maximum performance. Without ground usage my device is not working, the the topology of the circuit.

I have seen it vividly displayed by the kapanadze and his famous improvised resonator at the backyard demonstration, he stood and using a grounded in.

Its just that simple. I have read also, that instead of a grounding, you can have an antenna, spiked one best for the same purposes. By the way, a real solid ground can handle vast amperage while an aerial will not.

---

pese — Re: Tesla's Magnifying Transmitter (amplify electricity)

yes , an antenna instead of ground do capacatively the same as an ground. specialy fine, if they is tuned to the frequency. (if you see an dipole antenna for hv/ vhf they frequencies , you will see , and understand , that an antenna is equal to an "counter - ground (on one wire)
- are nothing others that your neon with one wire and open side
- capacitors couplet to "ground"

G. Pese

Pages: 1 ... 14 15 16 17 18 [19]   Go Up

LIST OF ALL CITATIONS
4 documents citing **US4237391 (A)**
5 documents cited in relation to **US4237391 (A)**

Sorting criteria: Priority Date   Inventor   Applicant   Ecla

PATENTS CITED IN THE SEARCH REPORT

1 **Device for producing a current**
Inventor: JAN VOLGER
EC: G11C11/44; H01F6/00C; (+2)
Applicant: PHILIPS CORP
IPC: *G11C11/44; H01F6/00; H01L39/00;* (+5)
Publication info: US3336489 (A) - 1967-08-15
Priority Date: 1962-09-12

2 **APPARATUS FOR GENERATING AN ELECTRIC CURRENT IN A SUPERCONDUCTIVE COIL**
Inventor: MASSAR ERNST
EC: H01F6/00; H01F6/00C; (+1)
Applicant: SIEMENS AG
IPC: *H01F6/00; H02K55/00; H01F6/00;* (+3)
Publication info: US3427482 (A) - 1969-02-11
Priority Date: 1965-03-24

3 **SUPERCONDUCTIVE POWER APPARATUS**
Inventor: SMITH STUART H JR
EC: H02K55/00
Applicant: STUART H SMITH JR
IPC: *H02K55/00; H02K55/00;* (IPC1-7): H02K1/20; (+2)
Publication info: US3469121 (A) - 1969-09-23
Priority Date: 1964-10-21

4 **SUPERCONDUCTING DYNAMOELECTRIC MACHINE**
Inventor: MCFARLANE IAN DUNCAN
EC: H02K55/00
Applicant: NAT RES DEV
IPC: *H02K55/00; H02K55/00;* (IPC1-7): H02K9/10
Publication info: US3560773 (A) - 1971-02-02
Priority Date: 1966-06-16

5 **ROTARY ELECTRIC AC GENERATOR UTILIZING THE MAGNETIC SHIELDING AND TRAPPING BY SUPERCONDUCTING PLATES**
Inventor: KAWABE USHIO ; DOI TOSHIO (+3)
EC: H02K55/00
Applicant: HITACHI LTD
IPC: *H02K55/00; H02K55/00;* (IPC1-7): H02K; (+1)
Publication info: US3564307 (A) - 1971-02-16
Priority Date: 1968-07-24

LIST OF CITING DOCUMENTS

6 **ENERGY GENERATING APPARATUS WITH MAGNET**
Inventor: JANG SOON-GIL [KR]
EC: H02K53/00
Applicant: JANG SOON GIL [KR]
IPC: *H02N15/00; H02K53/00; H02K55/00;* (+4)
Publication info: WO0042701 (A1) - 2000-07-20
Priority Date: 1999-01-09

7 **Static field converter**
Inventor: ABOLAFIA ANDREW [US]
EC: H02K19/18; H02K21/40
Applicant: ABOLAFIA, ANDREW
IPC: *H02K19/18; H02K21/40; H02K55/06;* (+4)
Publication info: US5710531 (A) - 1998-01-20
Priority Date: 1996-05-29

8 **Superconductor motor provided with superconductor shield**
Inventor: KAMBE YOSHITAKA [JP] ; SHINOZAWA TAMIO [JP]
EC: H02K55/06
Applicant: TOYOTA MOTOR CO LTD [JP]
IPC: *H02K55/06; H02K55/00;* (IPC1-7): H02K55/00; (+1)
Publication info: US5723925 (A) - 1998-03-03
Priority Date: 1995-05-15

9 **Electric current generator including torque reducing countermagnetic field**
Inventor: GERMAN JAMES W [US]
EC: H02K21/38
Applicant: GERMAN JAMES W [US]
IPC: *H02K21/38; H02K21/00;* (IPC1-7): H02K1/12
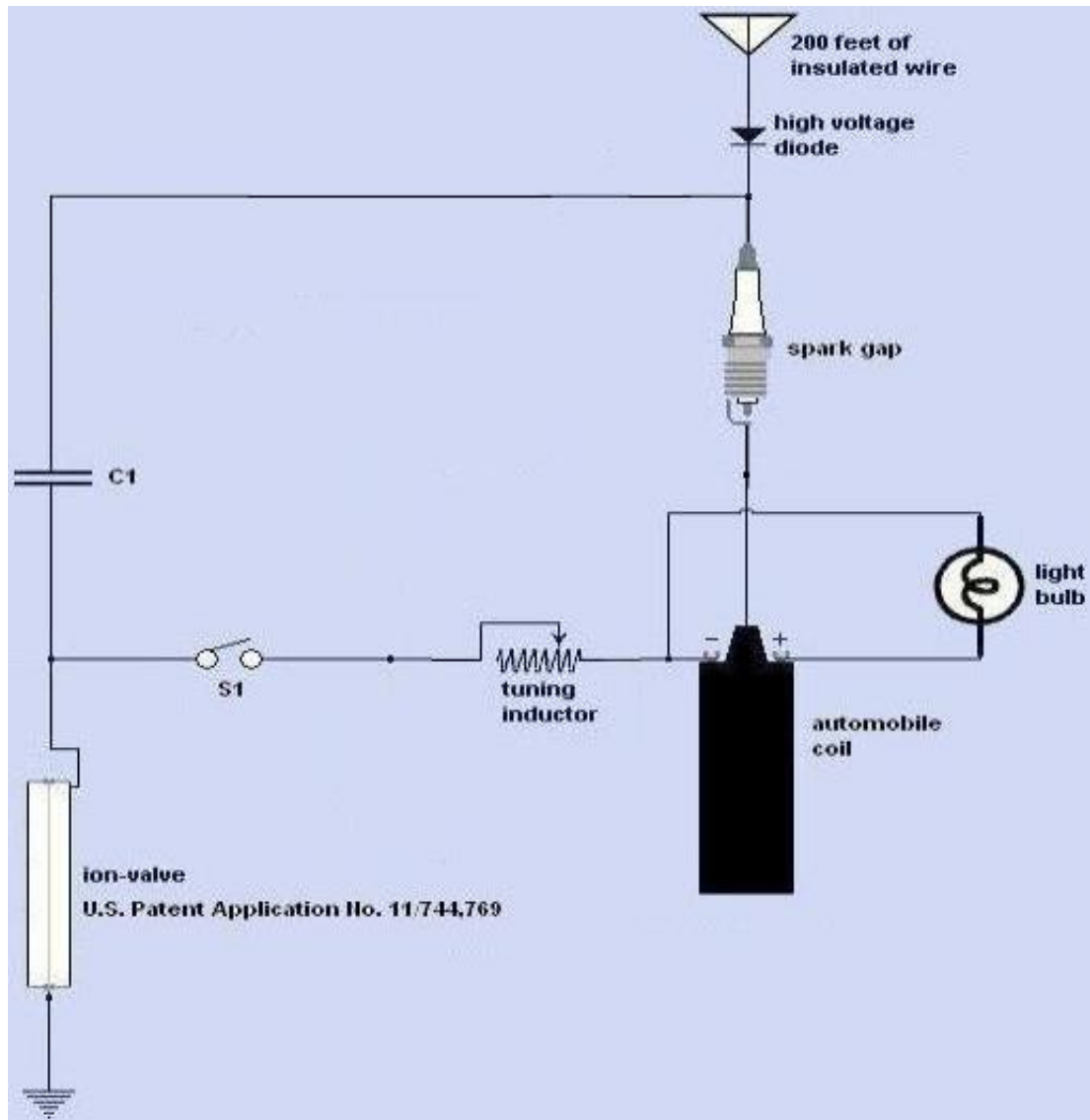Publication info: US5191258 (A) - 1993-03-02
Priority Date: 1991-09-11

Data supplied from the *espacenet* database — Worldwide

MODERN RADIANT ENERGY CIRCUIT

Posted October 22, 2004 - updated December 28, 2007

Modern Perreault Conversion Circuit

DESCRIPTION

1. S1 is closed first to charge C1. Once C1 is charged S2 is closed to initiate the tank circuit.

2. The automobile ignition coil transforms the high voltage on the primary side to a lower voltage at a higher current.

3. The primary is tuned to the secondary for resonance.

4. A pre-glow discharge is present in the ion valve.

5. Electrons are created in the ion valve through ultraviolet light (radiant energy) reactions. The valve is an energy multiplying transducer.

6. The insulated wire and ground serve as a source of ambient voltage potential.
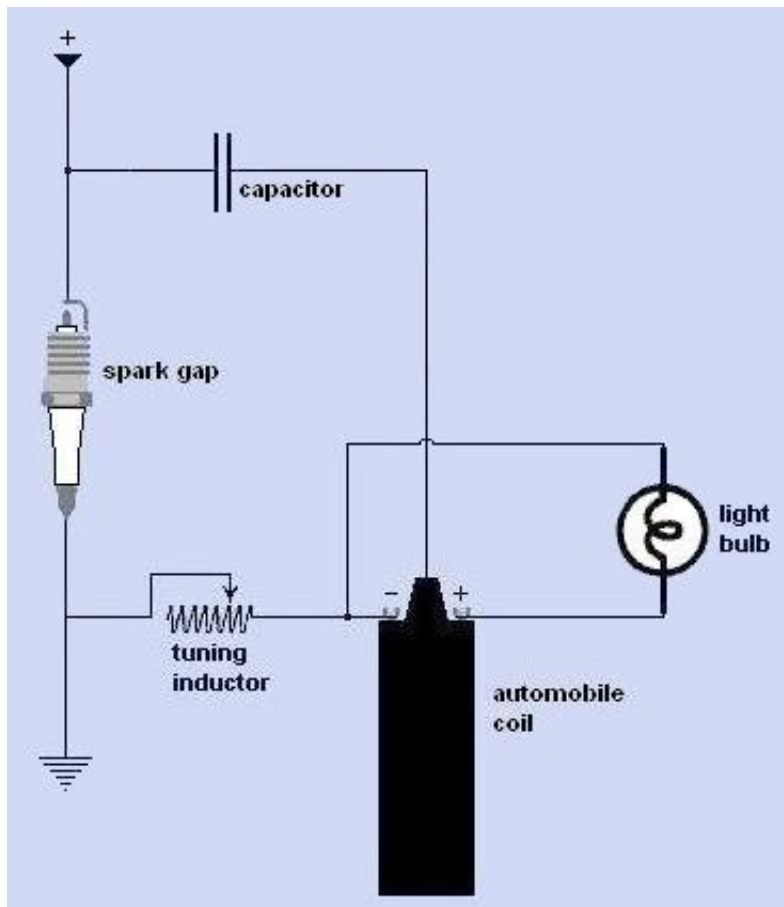
Basic Tesla Conversion Circuit

Reference

http://www.nuenergy.org/alt/radiant_energy_diatribe

PESWiki.com **-- Pure Energy Systems Wiki:**   Finding and facilitating breakthrough clean energy technologies.

Home News Directory PowerPedia Congress Radio Video Newsletter Store Submit

twitter
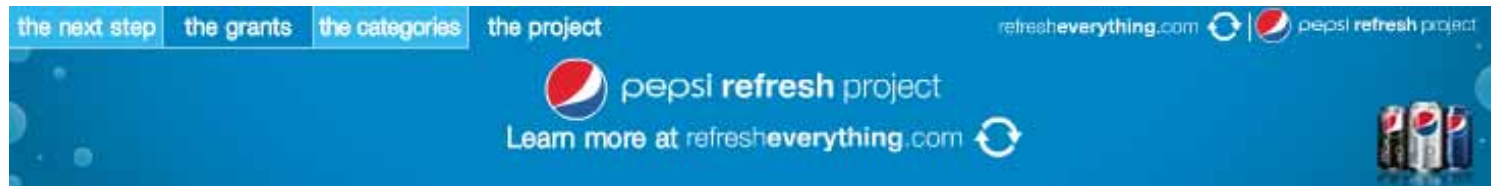
OS:Radiant Energy Antenna System

From PESWiki

> A search for impinging designs with "prior art" IP claims is under way, and so far does not seem to include any significant competing designs. Please see 'Related Designs'
>
> — Radiant Energy Antenna System Team.

OS:Radiant Energy Antenna System is a simple replication of the well known method for generating power, which is related to Nikola Tesla research. This article was originally disclosed by Mark Eldridge.

Contents

■ 5 See Also

Building the Radiant Battery Charger

I must preface this by saying that after setting this up I was VERY disappointed in the results I got. I couldn't get the dead battery to take more than 8 volts charge in the first 24 hours, which was the controlled test I wanted to run. Then to really rub it in, on my third day of writing this I received a copy of the new book by Tom Bearden and John Bedini titled Free Energy Generation, 20 Bedini-Bearden years, and was taken aback by the fact that the very same setup I show you here is also in their new book. Sure they drew it up differently than I was going to show it, but even having said that, there are things about this setup that are **not** told to you in Bearden's book.

Those of you who have read the writings of the well known "Free Energy"? researchers like Bearden or Bedini know that they have tried to teach the general public about how simple it is to build this type system. Their biggest drawback is the fact that they are so far beyond what most people know about electrical circuits that they turn people off with their 15 letter high-tech wording. They understand what they mean when they say something, but most are simply blown away with the techno-word-ology they use. It gives people an uneasy sense of inferiority. The technology they have brought forth needs to be given to people in ways they can actually understand. Most people, given the right teacher, can grasp any concept.

Knowing exactly, precisely what's going on in this setup and how it does what it does isn't necessary to get results. However there are some things you should know about how the process manifests itself. I could write volumes on what is happening, but it would only serve to confuse. Different people call the same effect by different names; this only helps to further the confusion. After reading this and seeing for yourself how it functions, you'll begin to get an idea of how the other systems I'll write about actually work. They all have basically the same energy running them, some will utilize a mechanical method of input, other's will use a natural input. So here goes, in the simplest language I know how to use.

In the "normal" way of charging batteries, we plug in our charger to our wall outlet and hook the leads up to positive and negative, this much makes sense to anyone, but the actions taking place in the inner workings of the battery are of major importance. In our "normal" scenario we are pushing (quite violently) the ions in the electrolyte (battery acid) backward, toward the negative sides of the plates. This causes heat and is classified as a "positive electrical event". This is why in the "normal" re-charging process the battery gets warm. Any action that causes heat to be generated is not generally considered to be radiant, ether, or any type of free energy. There are exceptions, of course, but we won't go into those in this paper.

Our setup will work in a way that pulls the ions toward the negative plates of the battery. This is known in the scientific community as a form of implosion. Negative Electromagnetic energy converges, while positive energy diverges (expansion or explosion, rather than implosion). When hooked up to re-charge in this way the battery will be cold to the touch.

Nikola Tesla described the way he used energy pulses as a "disruptive discharge". Tom Bearden calls it "sharp gradients". But no matter what you call it, the basis of the technique is the same. That is to gather energy or voltage potential, in a capacitor and then abruptly discharge the stored energy across the load, which in our case will be a battery which will be gated from the negative (earth) side using a Silicon Controlled Rectifier (SCR) and a small neon bulb which will time the discharges as a kind of spark gap.

A Word about Capacitors

There are different kinds of capacitors you can use for this setup. Capacitors called Electrolytic are made for direct

current (D.C.) applications only. In this system you can use Electrolytic or the Ceramic (disc) type. Electricity found in nature is usually D.C. Although D.C. actually can and usually does have a very high (Millions of cycles per second) frequency. Most instrumentation shows D.C. as a straight line at a given amount of voltage (actually 13.5 volts on a regular deep cell battery considered to be 12 volts) but is not really a steady source but is actually resonating at millions of cycles per second. The energy gathered by natural D.C. sources can be utilized locally where it is collected. When deciding what capacitor you will need, try to remember that the voltage ratings of a given capacitor is for reference if they are used in a "normal" circuit. When placing them into our system we aren't limited to the voltage that a particular capacitor is rated at because we are using another type of energy in it. The value, in Microfarads, can be 3 to 10. In our setup shown here the capacitor is 10 Mfd.

Those of you who have studied the works of John Bedini know that in some of his references he states that his system of recharging provides a magnitude of negative voltage in the hundreds of thousands of volts. His systems don't blow up or melt down because he tunes them to use negative energy, which was said earlier to be convergent energy, not normal divergent energy. This is how he gets away with using SCR's rated at 800 volts, even though there could be hundreds of thousands of (negative) volts going through them. The same holds true for the capacitor used in the system.

Silicon Controlled Rectifier (S.C.R.)

The SCR we use will always be the same one regardless of the system it is put in. If it's good enough for Bedini, it's good enough for us. It is rated at 800 volts, 50 Amps. The Amps (current) rating isn't important so we buy one rated in the lower current range, since current isn't a factor. This SCR shouldn't cost more than $5 or $6 (US). If you wish to, you can spend hundreds $$$ on ones that are rated with higher current values, but there's no need to do so.

Where Do I Put It?

When figuring out where to put your system you will have to take into consideration what surroundings you have to work with. If you have a large farm, space won't be a factor, but if you are living the city or suburbs, your choice of where to put the antenna will be limited. The standard to use when figuring your available potential, one would need to see what height you will place the antenna then multiply that height by 200 volts per meter of height from the ground. Some who have built these antenna systems use 300 volts per meter as their voltage calculation factor. Remember, the negative energy will be very forgiving even if you're using what you think may be an under-rated capacitor.

The Procedure

The overall process is very simple and straightforward. Tesla showed us how to do this over 100 years ago. Whether we are mechanically providing the radiant potential or getting it from nature, this system and others like it are about to become widespread. Even if you don't have the time to build it now, order the parts and have them so that when the time arrives you won't be scrambling for them and you'll be able to keep your water well going and provide some kind of comfort for yourself and family. Just get the parts listed and put it together or store them for future use.

Those of you who put the system together and have disappointing results as I did, don't give up or throw out the parts. In the next pdf file I send out I will show you how to mechanically induce the energy using the same S.C.R. and capacitor and have a reliable system that I believe anyone can build.

Tinkering with it will be fun, and you'll discover that if you have younger children, they will be interested in it also and that's a good thing since this is probably what they will be using in the future. (Sooner than you may think)

Diagram

The length of the antenna can be any distance. The longer it is, the better you will have at finding the energy source. Generally it is not longer than 70 meters. The antenna can be any hieght. Use rule of 200 volts per meter off the ground. Antenna can be copper, romex, or steel; any size from 12 to 22 gauge will work.

The NE 2 Neon lamp acts as a spark gap and times the impulses to the battery. It is sensitive to the voltage the voltage buildup and usually works nicely, even in other systems.
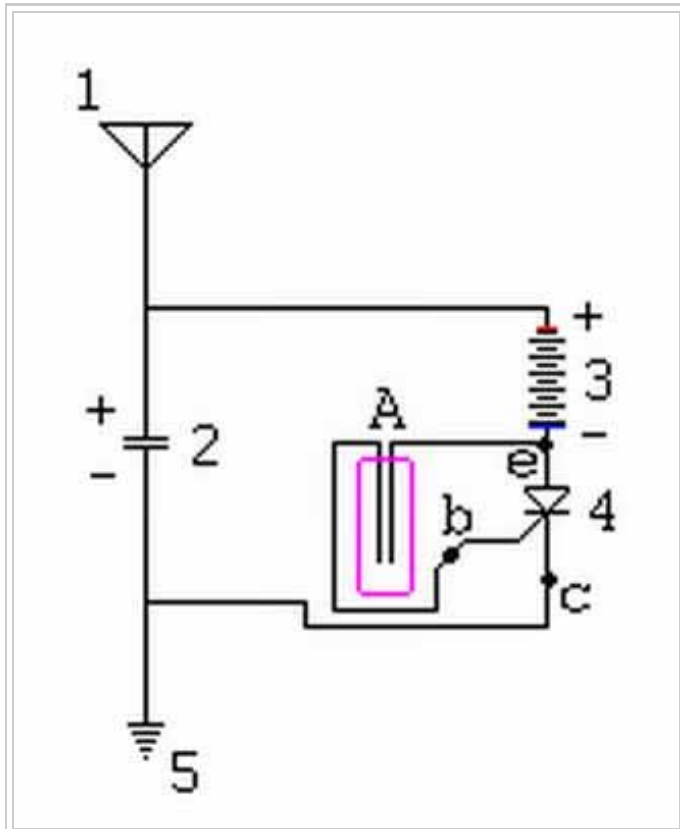
Legend: 1: Antenna node; 2: Capacitor (3 to 10 microfarads); 3: Battery; 4: 800 Volt SCR (e: pin; b: pin; c: pin); 5: Ground; A: NE2 Neon lamp.

Here's what we need as well as some simple explanations of what's what and how it's **supposed** to work.

Parts List

Here's what the order form looked like. The following part numbers and prices are from www.mouser.com (http://www.MOUSER.com) , and are in U.S.$
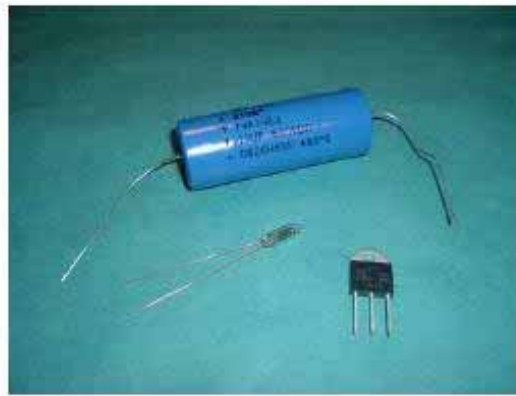
- The Capacitor:
    - 75-TVA1963
    - Vishay-Sprague 600V 10uF
        - $15.37

- The SCR:
    - 511-BTW69-800
    - STMicroelectronics TO-3P 50 Amp 800 Volt
        - $4.70

- The NE-2:
    - 606-A2B
    - Chicago Miniature T-2 65VAC .7mA NE-2V
        - $0.50
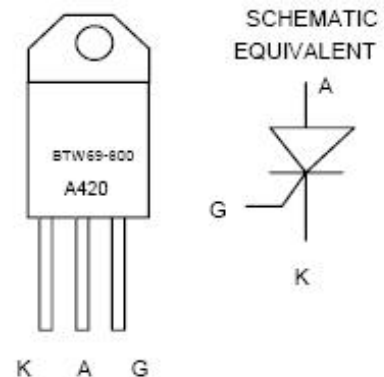
Sub Total: $20.57 Shipping: To Be Determined TOTAL: $20.57

Setup

Let's Go Outside and Set It Up

We'll find a place for the antenna, and then bring the wire down to the place where you're going to actually charge the battery. If you're trying this with a lead-acid battery make sure it is up to level with water or electrolyte. In this setup I'm going to use enameled copper wire for the antenna. I used #22 wire which is thin, but should handle what I'm trying to show here.

I'm going to attach the wire to a 10 foot tall (3 meter) board using staples and then nail the board upright against a fence, then string the wire along an existing fence or some other means of support. I will make this antenna 110 feet long, (33 meters) including the part nailed to the board that will stand up for the antenna height.

Then we hook up our parts as shown on the next page. Capacitor positive lead and the antenna lead directly to our battery junction (at the battery post) and the negative lead from our capacitor to the negative point at the rod we will hammer into the ground. I had the copper ground rod in my shop already but they are available at any good hardware store as well as any wire you may need.

Then the Negative battery post to our S.C.R with our NE-2 across the leads as shown in the photo. (Middle lead to battery neg.) The left lead from the S.C.R. joins our other lead from the capacitor at our ground, via the rod I hammered into the ground.
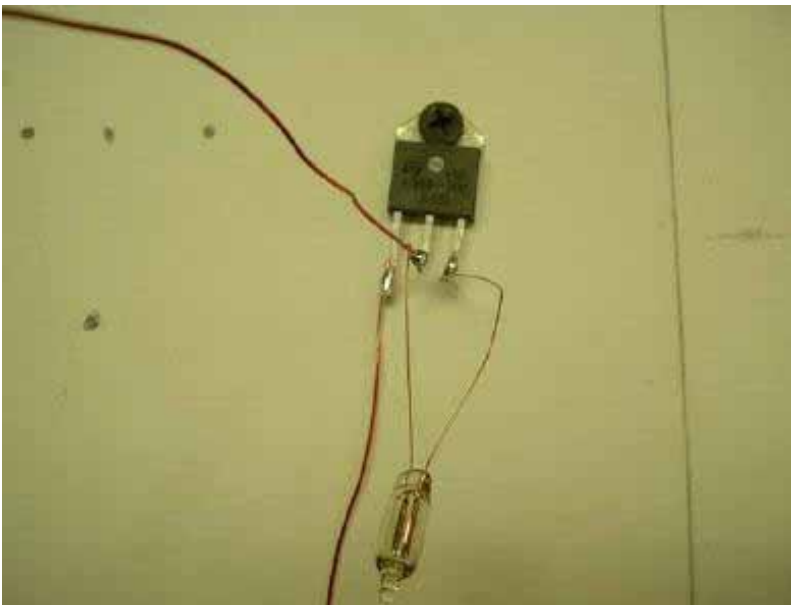
Copper Coated Steel Ground Rod

24 Hrs hooked to antenna and meter showed 8 volts
(Bottom scale)

NOTE

> *If you can actually see the NE-2 lighting up or flashing consider yourself lucky because you've found a great source of energy. Most of us probably won't see it light up, and a few will occasionally see a flicker like a dying candle. **THAT'S IT!!!!!** Just measure the voltage of your charging battery before you hook it up to the setup. Also write down the time of day you started and track the recharging.*
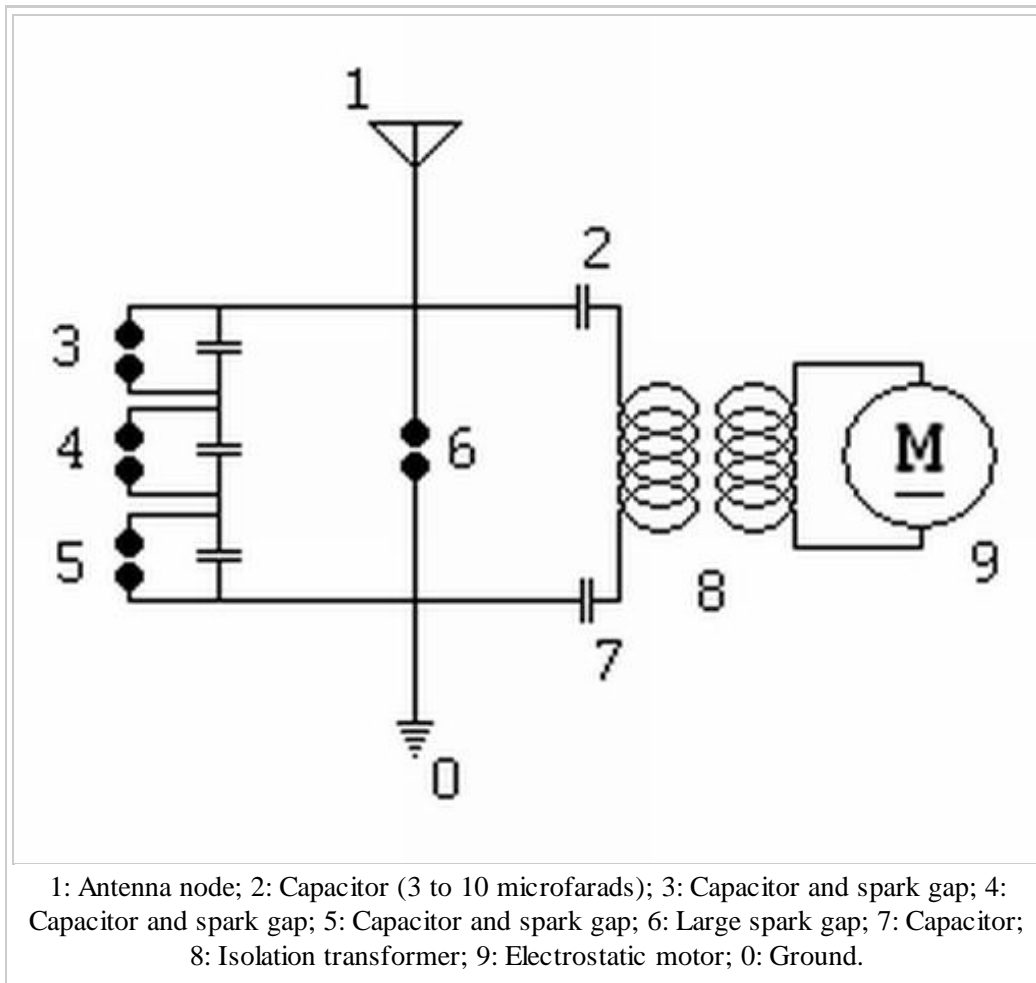
Variation on the setup

I want to also show a variation to this style setup. The reason I show this here is to give you an idea how you can setup an overshoot mechanism to dump excess energy should a thunderstorm or heavy rain come to your area while trying to use this setup to recharge a battery. I will say here and now that I have never tried this overshoot circuit, and as such can not offer any first hand experience regarding the effectiveness of the overshoot section.
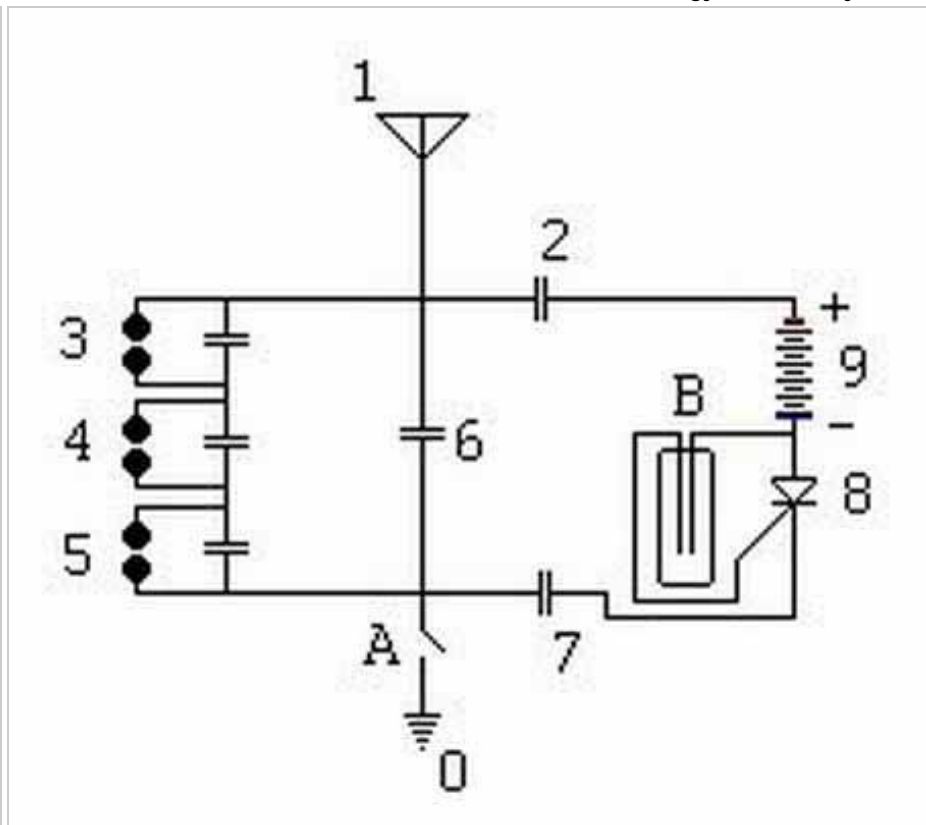
The spark gaps on the left hand side of the drawing are further apart than the gap in the middle, and as such are actually used as a sort of resistor setup to act as an overshoot mechanism in case the larger spark gap receives too much energy from the antenna, like during a thunderstorm.

This drawing was taken from U.S. Patent 1540998 (http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=1540998) (G.patent (http://www.google.com/patents?q=1540998) ; PDF (http://www.pat2pdf.org/pat2pdf/foo.pl?

number=1540998)), assigned to Hermann Plauson. If anyone tries this particular setup please inform the group of results

1: Antenna node; 2: Capacitor (3 to 10 microfarads); 3: Capacitor and spark gap; 4: Capacitor and spark gap; 5: Capacitor and spark gap; 6: Large spark gap; 7: Capacitor; 8: Isolation transformer; 9: Electrostatic motor; 0: Ground.

This is how the overshoot would be incorporated into the original S.C.R. style setup.

1: Antenna node; 2: Capacitor (3 to 10 microfarads); 3: Capacitor and spark gap; 4: Capacitor and spark gap; 5: Capacitor and spark gap; 6: Capacitor; 7: Capacitor; 8: SCR; 9: Battery; 0: Ground; A: Switch point; B: Device (Neon lamp).

The larger spark gaps can be just simple nut and bolt sets drilled through a wooden board. Simply place them within a few thousandths of an inch of each other (.045 inch) Use a feeler gage to be sure you have the correct spacing. The NE-2 will be much closer than .045 so the gaps on the overshoot will work properly and not short your gathered energy to ground.

The capacitors used in the overshoot can be the same value as the main capacitor. They are in series so when one loads up it will let go its charge into the next and so on then the excess will be driven into the ground, unless it is dissipated by the spark itself. Of course you could just disconnect the setup with a switch at Point A above, that way it's not grounded if foul weather approaches.

GOOD LUCK, LET THE GROUP KNOW OF YOUR SUCCESSES AND FAILURES!''

Hopefully you will not have the less than enthusiastic results I had. My results could have been the battery being absolutely worthless but I wanted to show that even using a worthless, old, dead battery it would still get some voltage in it.

Related Designs

Designs

Circuits have been put forward by:

- Bruce A. Perreault
- "Qiman"

- Paul Clint
- Lawrence Rayburn

References and evidence

- Radiant Energy Diatribe (http://www.nuenergy.org/alt/radiant_energy_diatribe.htm) between Paul Clint and Bruce Perreault
- Modern Perreault Conversion Circuit (http://www.nuenergy.org/experiments/modern_radiant_energy_circuit.htm) - Posted October 22, 2004 - updated October 14, 2005

Comments

Document

> To Bruce A. Perreault:
> I had a 200' antenna hanging over my house going to a cap almost 5 years before this website: http://www.nuenergy.org/alt/radiant_energy_diatribe.htm
> You NEVER invented this concept and nobody copied you, if anything seeing I was doing this before the above posted website, it is more than obvious that you probably copied me!
> My experiment predates your letters from 2001+ as well. Soon you'll be claiming you invented electricity. (from User_talk:Qiman)

>> This document "Radiant Energy Antenna System" was given to me, a few days ago by Mark. Upon checking it out, and sending it to a friend, i got asked if "Lawrence Rayburn" had given it to me. I watched the document that the friend sent, claiming I got the document from Lawrence Rayburn, and forwarded it to Mark. I don't think anyone came first with this one anymore, and no-one should claim "first". It's all Nikola Tesla anyway. (from User_talk:esaruoho)

Response from Bruce A. Perreault

If you read the article that I posted on the above referenced webpage... http://www.nuenergy.org/alt/radiant_energy_diatribe.htm I never claimed that I invented the circuit. Clearly, Nikola Tesla was the first which is seen through his U.S. patent numbers [685,957 (http://www.freepatentsonline.com/685957.pdf)] and [685,958 (http://www.freepatentsonline.com/685958.pdf) . However, I did provide the circuit in the article that utilizes modern parts. I have since designed improved circuits that are used to convert a narrow band of radiant energy into useful electrical current. The 'radiant energy antenna' is a passive static electric converter that demonstrates how static electricity can be transformed into electrical current.

In Tesla's patents he uses a polished plate that was the first crude solar cell. Electrons are ejected from the plate when it is exposed to sunlight. In patent number [685,957 (http://www.freepatentsonline.com/685957.pdf)] he uses ultraviolet light and cathode rays to ionize the air to charge his system. In patent number [685,958 (http://www.freepatentsonline.com/685958.pdf)] only a cathode ray tube is used to demonstrate his system.

What is truly unique on the webpage is Paul Clint's coax cable generator. I have not heard of anyone doing this before February 3, 2003.

> *-Bruce A. Perreault*
> January 15, 2007

Radiant energy devices

"*If I have seen further, it is by standing on ye shoulders of Giants*". - Newton ...

Vion, Ward, Loomis, Palencsar, Pennock, Plauson, and Tesla should be cedited with the "invention" development. Vion was one of the earliest patent applications. Tesla made great strides. These were all great individuals. But, remember, others (such as Franklin) also developed devices that harnessesed radiant energy (with a antenna as we would call it today).

Reddi 20:37, 16 Jan 2007 (EST)

FWIW some observations

Some one, perhaps Tesla or Plauson, advised that in systems like this it was best to never use the primary circuit to power the load; instead use the secondary circuit for that. Also, Tesla did state that when ever he wanted a source of electrons he generally just used a ground to the earth.

Tesla radiant energy device.

The Plauson diagram, Radiant_energy_antenna_system_08.JPG, demonstrates this concept of separation. And in fact, the small diagram, 'Tesla radiant energy device', of one of the variations from Tesla's 1901 Radiant Energy patent, 685,957, also demonstrates this principle although at first glance it may not seem to.
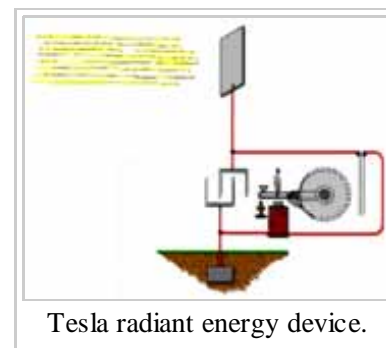
With that in mind the first diagram, Radiant_energy_antenna_system_01.JPG, of the experimental setup discussed here is probably in error as the load in this case, the battery to be charged, forms part of the primary circuit. If the battery was faulty, as seems to have been the case, then the primary circuit would not have been able to function properly.

There also seems to be a problem with the proposed modified experimental design, as shown in the diagram Radiant_energy_antenna_system_09.JPG. Here a capacitor, #6, is shown where in the Plauson design a spark gap exists. While this may simply be a 'typo' error, without some sort of switching mechanism in this location there is no way to complete the primary circuit. It seems that the correct modification would be to move the freon bulb to this location from where it is shown in what is now the secondary circuit as it serves no purpose there.

There would also seem to be a need for a ground connection in the secondary. The reason for this is because the obvious method to adapt Tesla's or Plauson's designs to the experimental circuit would seem to be for the primary to power a step up coil which would energize a capacitor in the secondary which would provide a HV positive charge on the battery's positive post. If the negative post is then connected to a ground then the HV potential on the positive battery post will 'attract' the negative ions in the battery to the positive plates (shades of Gray's 'splitting the positive'), and the ground connection will provide a constant supply of electrons to the negative post. In this case, Tesla's standard design with the coil primary in line with the switching mechanism is probably preferable over the standard Plauson design as shown.

A final observation is that current is determined by the movement of electrons throughout the entire volume of a conductor; which means that the mass of the wires in a charging circuit for a battery needs to be matched to the voltage. The thin wires shown in the pictures wouldn't seem capable of supplying anywhere near the current required with the voltage attained.

-MThompson
22 April, 2008

Patents and external articles

- U.S. Patent 685957 (http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=685957) (G.patent (http://www.google.com/patents?q=685957) ; PDF (http://www.pat2pdf.org/pat2pdf/foo.pl?number=685957)) Nikola Tesla Patent
- U.S. Patent 685958 (http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=685958) (G.patent (http://www.google.com/patents?q=685958) ; PDF (http://www.pat2pdf.org/pat2pdf/foo.pl?number=685958)) Nikola Tesla Patent
- U.S. Patent 1540998 (http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=1540998) (G.patent (http://www.google.com/patents?q=1540998) ; PDF (http://www.pat2pdf.org/pat2pdf/foo.pl?number=1540998)) Hermann Plauson Patent

- Harnessing Nature's Electricity (http://www.nuenergy.org/alt/harnessing_nature's_electricity.htm)
- Hermann Plauson's Book on Converting Atmospheric Electricity (http://www.nuenergy.org/zip/plauson.zip)

- Bruce A. Perreault, "*Nikola Tesla's Radiant Energy System (http://www.nuenergy.org/alt/tesla_energy.htm)* "
- Bruce Perreault, "*New Generation of Radiant Energy Devices (http://www.nuenergy.org/alt/Exotic%20Research%20New%20Generation.htm)* "

See Also

- OS:Ambient_Energy_Collection_Device
- OS:RED ELF

- Other Open Source Projects
- PESWiki main index
- PES Network Inc. (http://pureenergysystems.com)

Retrieved from "http://peswiki.com/index.php/OS:Radiant_Energy_Antenna_System"

"When you're one step ahead of the crowd you're a genius.

When you're two steps ahead, you're a crackpot."
     -- Rabbi Shlomo Riskin (Feb. 1998)

- This page was last modified 08:18, 22 April 2008.
- This page has been accessed 24,183 times.
- Content is available under GNU Free Documentation License 1.2.
- About PESWiki
- Disclaimers