



NOBEL PRIZE NOMINATIONS FOR ENERGY

By Hal Fox, Editor

Now that we understand the importance and nature of **cold fusion**, it is time to nominate B. Stanley Pons, Martin Fleischmann (Fellow of the Royal Society), and Kenneth R. Shoulders for a Nobel Prize. Pons and Fleischmann deserve the prize for their fundamental discovery of cold fusion [1]. Kenneth R. Shoulders deserves a part of the prize for his excellent work in discovering and revealing how nuclear reactions take place in both the palladium-heavy-water system and in the sono-fusion system [2]. A further degree of experimental information about nuclear reactions has been added by the Neal-Gleeson Process [3].

A summary of these fundamental discoveries illustrates how important they have been and **will be in the rapid advancement of the treatment of radioactive wastes** (especially radioactive slurries); the production of thermal energy without neutrons; and probably the development of **factory-made scarce elements** [4].

The importance of these discoveries merits a tutorial on the power of ion-carrying charge clusters.

CREATING A CHARGE CLUSTER

Charge clusters can be created in a variety of environments ranging from near vacuum to some liquids. Kenneth Shoulders has taught, in both his book [5] and his patents [6], how to make and recognize charge clusters. These charge clusters are created by most sparks, lightning, and more professionally, by the techniques demonstrated by Shoulders in several of his patents [6].

Recently, it has been determined that charge clusters can be created in liquids, provided that the correct electrodes, molarity, voltage and current are properly chosen. For some early research in which it is

believed that charge clusters were being created in ethylene glycol with silicon, see the work of Waring and Benjamini [7]. It is unlikely that the authors realized the nature of the "sparks" emitted from the silicon when the voltage was increased beyond the normal range for luminescence. It is also believed that the effective method for promoting nuclear reactions in the Neal-Gleeson Process is the formation and use of charge clusters, although this observation was not known to the authors at the time the paper was written [3].

It is believed that in their atmospheric spark-gap experiments, Reiter and Faile [8] are creating and observing the remarkable effects of charge clusters [8].

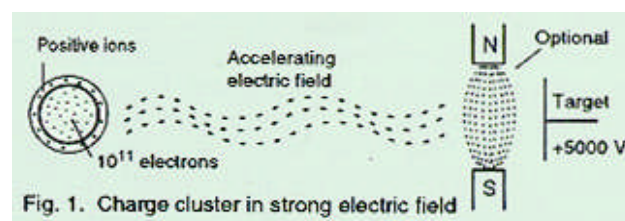


Fig. 1 illustrates a typical one micron charge cluster consisting of about 10^{11} (100 billion) electrons. Due to some, as yet unknown, high degree of dynamics, the cluster creates internal forces that are stronger than the mutual repulsion forces of the electrons. The end result is that the cluster is stable, at least while it is moving. As shown in the illustration, the negative cluster can attract and retain a relatively small number of positive ions (one ion for about every 100,000 electrons). In fact, the high degree of concentrated charge on a cluster will ionize gases and liquids under proper conditions. For example, if a charge cluster is created in a hydrogen atmosphere, some of the

ionized hydrogen ions (we call protons) will be attracted to the charge cluster.

In Fig. 1, we depict the charge cluster in a strong electrostatic field with a downstream anode connected to a positive 5,000-volt power supply. In this strong electric gradient, the charge cluster (and the attached ions) will accelerate to a velocity of about one-tenth the speed of light. If we were to build a proton accelerator, we would have to use an accelerating voltage of about nine million volts to impart the same velocity to a cluster of protons. **Therefore, this simple device is essentially a high-energy accelerator of positive ions but based on a low-energy initial source!**

We know that the proton is about 1836 times as heavy as the electron. If we calculate the impact momentum (mv^2) that has been provided to each proton attached to the charge cluster, we find that the impact energy, **according to standard nuclear physics**, is sufficient to cause nuclear reactions.

USING THE CHARGE CLUSTER

As discovered and patented by Shoulders [6], charge clusters can be used to make or create more energy output than input to the device. As discovered and now as a patent pending, Neal and Gleeson have found a method (Neal-Gleeson Process) by which **radioactive elements can be stabilized**. The method by which charge clusters can reduce radioactivity is conceptually easy to understand. If one looks at a chart of Nuclides and Isotopes, the high-mass elements are replete with radioactive isotopes. On the other hand, the lower-mass elements and their isotopes are more stable. The role of the charge cluster and its load of positive ions is to impact the radioactive heavy element; cause the elements to become unstable; promote **spontaneous fission**; and produce two (normally) smaller fragments which are usually stable. The process is basically simple when you know how to do it.

Now that we understand the process, at least one patent is pending on the use of an embodiment of the process by which low-energy (input) clusters can promote selected nuclear reactions which will produce high amounts of thermal energy. For example, let us assume that lead (Pb-208 to be precise) is the target element. We bombard the lead with a charge cluster, it becomes unstable and splits into two equal halves and provides us with two atoms of palladium (Pd-104). The process is a little more complicated because we

have to deal with the mass of the impacting ion. However, to keep it simple, assume that the Pb-208 atom with a mass of 207.976627 is impacted, caused to fission and produces two Pd-104 atoms. The total mass produced is then two times 103.90403 or 207.80806. **Note that the mass produced (207.80805) is less than the mass of the Pb-108 (207.976627). The difference in mass is not much, but according to Einstein's formula $E = mc^2$, we can calculate the energy equivalent of the missing mass fraction. Of course, even a small amount of missing mass multiplied by the speed of light squared will be a significant amount of energy. Therefore, this reaction, if we can cause it to be produced, will provide thermal energy to our system.**

MAKING SCARCE ELEMENTS

In the preceding section, we discussed the possibility of using Pb as a target material, impacting the lead with charge clusters and transmuting the lead into palladium to get excess thermal energy. **If we could accomplish that feat, then we would have the thermal energy plus a more valuable element produced than we started with!** Nature may not be so kind. The idea that a particular nuclear reaction is **possible** does not mean that the same reaction is **probable**. Nature will inform us, as we ask the correct questions, what we can and cannot accomplish. **However, it is believed that there are many scarce elements in the periodic table which we will be able to make from more plentiful elements.** It is the judgement of this author that an element in nature is scarce because the probability of making such an element is low -- meaning that the production of such element must require energy. However, it appears that creating energy with nuclear reactions will be relatively simple. It is also expected that we will be able to find the combination of ions and target elements that can be used **together with input energy** to create the scarce element of our choice.

SUMMARY

Now you realize the enormous importance of what Pons, Fleischmann, Shoulders, and others have accomplished. They should get the Nobel prize! They deserve the recognition. A new line of research and development in physics has now been provided. At least one, and probably several new patent applications have resulted from this new line of research and development. In summary, we now know how we can do the following:

1. Clean up radioactive wastes.
2. Create clean, abundant, thermal energy -- with no neutrons.
3. Create factory-produced scarce elements.

Note to investors: FIC has filed a patent application that will cover a broad range of nuclear transmutation topics. FIC is seeking interested help from brokers to help make a market for the soon-to-be-filed public registration of FIC's stock. If you can help, fax Hal Fox at 801-583-2963.

REFERENCES

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2. Kenneth and Steve Shoulders, "Observations on the Role of Charge Clusters in Nuclear Cluster Reactions", *J of New Energy*, Fall 1996, vol 1, no 3.
3. Bass, Neal, Gleeson, & Fox, "Electro-Nuclear Transmutations: Low-Energy Nuclear Reactions in an Electrolytic Cell," *J of New Energy*, Fall 1996, vol 1, no 3.
4. Hal Fox, Robert W. Bass, & Shang-Xian Jin, "Plasma-Injected Transmutation," *J of New Energy*, Fall 1996, vol 1, no 3.
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7. Worden Waring & E.A. Benjamini, "Luminescence during the Anodic Oxidation of Silicon," *J of the Electrochem. Soc.*, vol 111, no 11, Nov 1994, pp 1256-1259.
8. Reiter and Faile, "Spark Gap Experiments," *New Energy News*, Sept 1996, p 11ff.

BETA-DECAY, THE NEUTRON ADJUSTER

Hal Fox

It is known that heavy elements seem to have extra neutrons. For example, take the case of Uranium-238, the most plentiful (99.2745% in nature) isotope of uranium. This uranium atom has 92 protons and 146 neutrons, for a total of 238 protons and neutrons. Assume that we can split this uranium-238 nucleus into two equal halves by adding an alpha particle (helium nucleus with two protons and two neutrons). We would have an element with 47 protons. The element with 47 protons is silver. Assume that we have also split the number of neutrons in half and we have a silver isotope with 47 protons and 74 neutrons for a total of 121 protons and neutrons. Looking in a table of Nuclides and Isotopes [1], we find that there is an unstable isotope of silver, Ag-121, with a half-life of 0.78 seconds and that it will transform (decay) by the emission of a negative beta (β^- in the table).

BETA DECAY

In such a chart of the elements and isotopes, there is a valley of nuclear stability and the stable elements found in nature lie along this valley of possible elements and isotopes. Some authors will talk about a nuclear **drip line**, which is a boundary along both sides of this valley of stability beyond which elements are not known to exist with any measurable degree of stability. Silver-121 is adjacent to the drip line on the boundary of elemental existence.

According to D.E. Alburger, in a brief explanation of "Beta Decay" [2], such a nucleus may have too many neutrons (alternatively, on the other side of the valley of elemental stability, an isotope may have too few neutrons). Such an isotope, produced either naturally or artificially, has too many (or too few) neutrons. Therefore, the isotope will have an excess of energy as compared with its neighbors. In a sense, we can think of Ag-121 and other such isotopes as sitting on the hill overlooking the valley. Nature prefers that this excess energy be transformed and that the element become more nearly stable. **The mechanism is beta decay.**

In the case of Ag-121, the decay process is shown in the table of nuclides as β^- and the cryptic figure of 0.78s is provided. The 0.78 seconds is the time that it will take for one half of the Ag-121 nuclei to transform themselves by β^- (beta decay) into some other more stable nuclei. The way the chart is constructed, the results of a β^- decay is found by

moving up one row and to the left one column. In this case we find an isotope of cadmium (Cd-121). Note that the number 121 is preserved. That is, the number of protons and neutrons are still the same (conservation of the sum of protons and neutrons, or the baryon number).

The beta decay process transmutes the silver into cadmium (in this case) with no change in atomic weight (maybe a very small change due to the energy released with the electron). The change is the emission of a **beta ray**. After the beta ray was named, it was found to be an electron; and later found to be a combination of an electron and a neutrino, each of which is emitted by the decaying nucleus with a sharing of energy. In general, the energy emitted can be considered to be passed on to whatever material stops the electron and/or the neutrino. (Note that neutrinos are extremely hard to stop but also that they are not considered to be a form of damaging radiation). The beta, an electron with energy of motion, can be stopped with a relatively thin barrier. The entire process can be considered as one in which a neutron in the nucleus decides to become a proton and has to conjure up and throw away an electron (and a neutrino) to accomplish the mission.

For the case under consideration, U-238 + alpha becomes Ag-121 and then Cd-121. The story is not over. We have gotten rid of one neutron and acquired a proton. However, the Cd-121 is listed as being unstable and having two modes of beta decay with half lives of 8 and 13.5 seconds. The result of this casting off of another electron and the converting of another neutron to a proton brings us to a nucleus of Indium-121. In-121 is still unstable and becomes Tin, Sn-121, which is still unstable and suffers beta decay to become Antimony, Sb-121. Now we have rolled down into the valley of elemental stability. Sb-121 is stable. Assuming that we have begun with Uranium and its excess neutrons, we have converted neutrons to protons by moving from Ag-121 to Cd-121 to In-121 to Sn-121 to Sb-121. Each of these steps has transformed a neutron to a proton (four times). We now have a stable nuclei with 51 protons and 70 neutrons. Our process has converted four neutrons to four protons and thrown away four electrons and four neutrinos.

And that is how nature gets rid of the excess neutrons as we transmute heavier elements into lighter elements. Just thought you would like to know. According to claims in the Fox-Jin-Bass Plasma-Injected Transmutation patent application and article,

table-top particle (positive-ion) accelerators may soon be available at relatively small expense and therefore within the budget of colleges and high schools. This equipment will allow for further study of elements, isotopes, and transmutation. Therefore, one of the books (or wall charts) that are expected to increase in sales are the Charts of Nuclides and Isotopes [1].

REFERENCES

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2. R.G. Lerner & G.L. Trigg, Encyclopedia of Physics, 2nd edition, pp 93-95, c 1991, VCH Publishers, N.Y.

Fusion Briefings

NAVY ACKNOWLEDGES ANOMALIES

M.H. Miles, Benjamin F. Bush, Kendall B. Johnson (R&T Div., Naval Air Warfare Center Weapons Div., China Lake, CA), "Anomalous Effects in Deuterated Systems," NAWCWPNs TP 8302, September 1996, 99 pages, 36 refs, 35 figs.

EXECUTIVE SUMMARY

Our results provide compelling evidence that the anomalous effects in deuterated systems are real. Nevertheless, we have not been able to solve the reproducibility problem. This research area will remain highly controversial until reproducibility can be demonstrated. The lack of reproducibility stems mainly from unknown and uncontrolled variables in the palladium stock. There is a remarkable correlation of excess power with the source of the palladium. The best reproducibility was obtained using palladium-boron (Pd-B) materials supplied by the Naval Research Laboratory (NRL), Washington, DC. Seven out of eight experiments that used Pd-B cathodes produced excess power. In experiments that used the palladium from Johnson-Matthey, 18 of 28 experiments produced excess heat. In contrast there were several palladium sources that never produced excess power in any experiment. Our calorimetric

results, conclusions, and problems are practically identical to those reported by SRI International Energy Research Center, Menlo Park, California. They are also consistent with many other laboratories that have reported excess heat. Calorimeters that are capable of detecting excess power levels of 1 watt per cubic centimeter (W/cm^3) of palladium are essential for research in this field. The small volume of palladium in co-deposition experiments likely made it difficult to detect excess power effects.

Results from our laboratory indicate that helium-4 (^4He is used interchangeably with helium-4) is the missing nuclear product. Thirty experiments have shown a correlation between either excess power and helium production or no excess power and no excess helium. Studies using both glass and metal flasks place the ^4He production rate at 10^{11} to 10^{12} atoms per second per watt ($\text{atoms}/\text{s}\cdot\text{W}$) of excess power. This is the correct magnitude for typical deuteron fusion reactions that yield helium as a product. It is highly unlikely that our heat and helium correlations could be due to random errors. The only valid experiments that showed significant excess power but no excess helium involved a palladium-cerium (Pd-Ce) cathode.

Our best experiments produced up to 30% excess heat, 0.52 watts of excess power, and 1400 kilojoules (kJ) of excess enthalpy. This amount of excess enthalpy is difficult to explain by any chemical reaction. We have demonstrated that any recombination of the deuterium (D_2) and oxygen (O_2) electrolysis gases in our experiments can be readily detected and easily corrected. There was never any measurable recombination when the palladium cathodes were fully submerged in the deuterium oxide plus deuterated lithium hydroxide ($\text{D}_2\text{O} + \text{LiOD}$) electrolyte.

Anomalous radiation was detected in some experiments by the use of X-ray films, several different types of Geiger-Mueller (GM) counters, and sodium iodide (NaI) detectors. Normal radiation counts were always observed when no electrolysis experiments were running. The appearance of anomalous radiation always correlated with the expected rate of loading of the palladium with deuterium. Nevertheless, the anomalous radiation effect was not reproducible.

DECREASING RADIOACTIVITY

Otto J.A. Reifenschweiler (Philips Res. Lab., Eindhoven, The Netherlands), "Some Experiments on the Decrease of Tritium Radioactivity," *Fusion Technol.*, vol 30, no 2, Nov. 1996, pp 261-272, 27 refs, 9 figs.

AUTHORS' ABSTRACT

Experiments claiming a sharp decrease in the radioactivity of tritium incorporated in small monocrystalline particles of titanium have been reported and are described here in more detail. Additional evaluation provided a high degree of evidence for the decrease in the radioactivity of tritium. A first attempt is made to explain this remarkable effect in terms of a "nuclear pair hypothesis,"

ELEMENTAL REPLICATION?

Norman Wootan (P.O. Box 141049, Dallas, TX 75214)

Around mid September, I put together an electrolysis cell similar to the Mills Nickel Cold Fusion Cell with the goal of exploring the possibilities of making what is termed "Pristine Water." This water, which will be used by Homeopaths, will have had all memory or information removed. This is accomplished by recombining monatomic hydrogen and monatomic oxygen as generated in a properly designed cell. This is the ultimate in purity since this is water in a condition similar to the time of original creation. "Wholy Water." After several weeks of successful operation producing water that had all the earmarks of a true "pristine water" a fellow researcher suggested using an alternate electrolyte. A solution was selected that contained 77 colloidal minerals as found in plants that are the easiest assimilated into the body. With the electrolyte changed, the cell was put back into operation as before with a nice recombination burn and production of the sought after pristine water. After about an hour of operation the cell went absolutely "nuts" with the temperature rapidly climbing to boiling point and the current out of sight. When the cell was opened, we found a deep red sludge deposit which shorted the cell plates. Our first thought was that the electrolytic action precipitated out the colloidal minerals which caused the deposit found. The electrolyte was allowed to settle out the precipitate.

After decanting off, the clear electrolyte was returned to the cell for another run. Again the cell operated normally for about an hour with a normal recombination burn and recovery of the water being consumed by the cell in the splitting action. Again the cell temperature and current mirrored the first run. Again the cell contained the same amount of sludge residue. This process was repeated ten (10) times with exactly the same results. All of the sludge was carefully dried and weighed on an electronic scale with a five decimal resolution. The cell plates and all hardware were weighed to determine any loss of mass that may contribute to the mass gain observed in the sludge. Five hundred (500) ml of the original electrolyte solution used in the cell was vacuum distilled to determine the exact mass of colloidal minerals contained. When all factors were considered, we came out with a mass gain of 48 gm which cannot be explained by conventional electrolysis.

After talking to Dr. Robert Bass and Hal Fox, I learned of a patent that has been filed on the transmutation of elements in the cold fusion cell which is the process that Dr. John Bockris has been so active in. Both Dr. Bass and Hal Fox stated that what I was observing is not the same as the transmutation observed in the cold fusion cell since I have a overall mass gain and not a lateral movement of elements in the periodic table toward lighter elements with resulting heat release.

This unusual cell operation has caused quite a reaction in the scientific community. At this time I have built a complete new cell with every possible factor which could possibly explain the mass gain considered and documented. The ten (10) consecutive runs on the new cell will be completed soon and a report will be forthcoming.

What is interesting about this phenomenon is that when an eleventh run was made with the original electrolyte, exactly the same amount of residue was recovered as in the previous ten runs. Since the same electrolyte is reused each time with only distilled water being added to replace the volume lost by the removal of the solids and the water recovered by the recombination burn, we are hard pressed to explain the observed phenomenon. Our theory is that the 77 colloidal minerals contained in the electrolyte provide the atomic templates needed for the monatomic hydrogen (father of all the elements) to replicate selected elements in this exotic mixture. If you subscribe to the theories of the late Walter Russell

and his explanation of the octave based periodic table with monatomic hydrogen being what he describes as hydrons (precursor to hydrogen) then it is possible for the replication of elements directly from energy input alone. This is how all matter was created in the beginning as described by Schappelier in "The Physics of the Primary State of Matter." I will keep all informed as to our progress and findings in this very intriguing venture.

SPACE ENERGY

A REVOLUTION IN ENERGY TECHNOLOGY

Courtesy of Harold Aspden

November 5, 1996

"TOWARDS ZERO EMISSIONS AND SUSTAINABLE TRANSPORT"

The above heading was on an announcement sent to 78 invitees specially chosen to hear inventor "Stanley Meyer from Ohio, USA" deliver a paper about his work and answer questions. To those of us who are interested in the coming age of new energy technology, the announcement of an event having such a title was really something to applaud, because it showed that there are those in high places who really care about the mounting problems on the energy front. The choice of venue for that meeting was endorsement enough, it underlined the importance of the occasion. The meeting was to be at the premises of the British Parliament, inside the House of Lords, thereby facilitating attendance by those at the very seat of government.

The Rt. Hon. Lord Strathcona and Mount Royal was to introduce Stanley Meyer but, in this event, that honourable lord found he had to issue a cancellation notice on the eve of the meeting and convey his apologies to those who came totally unaware of that cancellation. Some had travelled hundreds of miles expressly to hear about that "energy revolution" from an inventor so acclaimed. But it was not to be. The letter of cancellation was short. It simply said that "owing to unforeseen reasons, it has been necessary to postpone the meeting. This is greatly regretted." The twenty or so privileged invitees who did arrive were left to harbour their suspicions that the idea of "free energy," and the prospect of an "energy

revolution," is just a mere myth after all. The voice of experience that was scheduled to speak about the new energy future was not there! This was, indeed, a missed opportunity, and one which cannot help our cause. For the record, the time and date of the meeting that was never held was from 5-7 pm on Thursday the 31st October 1996. Stanley Meyer was to speak about his "Water Fuel Cell" and the prospect of generating hydrogen from water with a "free energy" gain.

A QUANTIZED AETHER

Chuck Bennett (Sacramento, CA)

The recent debate about cold fusion has focused on the resurrection of a luminiferous medium [aether] as a mechanism to explain "over-unity" production of excess energy in hydrogenated metal lattices and other new energy phenomena. The debate about the existence of such a medium goes back to just before the turn of the century when Michelson and Morley found none. In 1905, Albert Einstein cast the medium aside as "superfluous" in a paper entitled, "On the Electrodynamics of Moving Bodies." A mathematical medium was introduced in later years based on a 4-tensor Riemannian geometry. The result is quite complicated and is proclaimed to be understood by only a few individuals.

A more practical approach to the resurrection of the medium is proposed herein, based on quantization of the medium. A spectrum of fundamental particles coined Q particles, short for quanta, creates the medium for larger particles such as the electron and proton. The flow of Q particles results in a toroidal vortex pattern that comprises larger particles.

The mass of an individual particle is determined by the relation, $m_Q c^2 = kT$, where m_Q is the mass of the Q particle, c is the speed of light, k is Boltzmann's constant, and T is the temperature in absolute degrees. **This relation yields a spectrum of fundamental particles starting on the order of a million times lighter than the electron.** The wavelength, λ , of a Q particle is determined by the expression, $m_Q c \lambda = h$, where h is Planck's constant. The simultaneous requirement of the two conditions, $m_Q c^2 = kT$ and $m_Q c \lambda = h$, causes the mass to get larger as the temperature gets higher and the size, as represented by the wavelength, to get smaller as the temperature gets higher.

Hot spots are more dense than cooler spots. Hot spots radiate more as the size gets smaller. Therefore, a natural contraction is associated with smaller, denser regions of matter. As these regions radiate with more energy, the contraction of matter must occur as an automatic consequence. Gravitation is the result of these simultaneous conditions.

Quantization of the medium answers many theoretical problems encountered since Michelson and Morley. The dichotomy between aether drag and stellar aberration is nicely explained by a quantized medium. It is surprising that the quanta approach has not been applied to the luminiferous aether given the success of quantum mechanics. Einstein did not win the Noble prize for the introduction of special relativity, but rather for the photo-electric effect in 1921. The photo-electric effect is purely a quantum mechanics principle.

[Note: *NEN* readers: Any comments or suggestions for Chuck Bennett? Ed]

MISCELLANEOUS

ANTI-GRAVITY MACHINE

Henry P. Dart, III

The recent announcement by Russian scientist, Eugene Podkletnov, that he has invented an anti-gravity machine, which was to be described in an article authored by Podkletnov and Finnish physicist, Petri Vuorinen, is now tainted with controversy. The British journal *New Scientist* has reported in its 21 September 1996 issue that the article, which had been scheduled for publication in the *Journal of Physics D: Applied Physics*, has been withdrawn following a statement by the alleged co-author, Petri Vuorinen, denying that he ever worked on anti-gravity with Podkletnov.

Although Podkletnov has said that tests ruled out the possibility that the claimed weight loss was the result of magnetic fields or air flow, his statement is suspect. His own diagram of the machine indicates it involves a levitating ring of superconducting material spinning at a rate of 5000 rpm. Apparently any anti-gravity

effect produced by the machine is the well known magnetic effect associated with superconductivity.

At the Southwest and Rocky Mountain Division meeting of the AAAS in Norman, Oklahoma (May 1995), the author of this article discussed briefly his theory of repulsive gravity which occurs in the centers of the enormously massive central stars that exist in the nuclei of all galaxies, such as the one in the galaxy, M-87, which has a mass of 2.4 billion solar masses. Under this theory, which has nothing to do with magnetism or superconductivity, when the scalar field value in the interior of such a massive star attains a value roughly equal to that which occurs at the Schwarzschild radius, under the formula $F = ma$, the force also becomes negative or repulsive. This phenomenon has the following effects:

1. The central region of the star develops enormous centrifugal forces that counteract the equally enormous centripetal forces developed in the exterior portion of the star, thereby preventing the gravitational collapse of very massive stars, a heretofore unsolved problem; and
2. It supplies an alternative explanation for the enormous jets of matter that are expelled from the polar regions of the central stars, which jets are currently explained as being propelled by magnetic forces that operate at some distance from the central star, while the central star is described as a "Black Hole" from which nothing, not even light itself, can escape.

The author's paper on this subject is scheduled for publication in *Toth-Maatian Review*.

ELECTRIC SPACECRAFT JOURNAL

Contents Summary for July/Aug/Sept, Issue 19,
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ESJ Forum - Thoughts On:
ELECTROMAGNETICS - page 6

With the *ESJ* forum we present differing views on a selected topic. The contributors are often far more knowledgeable about the subject than we are at *ESJ*. But, even the most knowledgeable have different opinions, and we expect the forum to generate much

critical arguments. It is our hope that by including such diverse views, we will facilitate interactive learning and understanding. In this issue, the discussion centers on commentary about electromagnetics that was sparked by *ESJ* 18.

Contributors are the following:

Dr. Robert L. Carroll received a M.S. in mathematics and a Ph.D. in mathematical physics from West Virginia Univ., Morgantown. He has held numerous distinguished educational, research and engineering appointments, and has published several original scientific papers.

Leslee Kulba, received a B.S. in mathematics from Michigan State Univ. She has taught college level math and physics classes.

Hugh Hildreth Skilling from Fundamentals of Electric Waves, New York, John Wiley & Sons, Inc., 1960.

David J. Griffiths from Introduction to Electrodynamics, Englewood Cliffs, NH, Prentice-Hall, Inc., 1989.

Thomas E. Phipps, Jr. attended Harvard University, earning a B.S., a M.S., and a Ph.D. He also studied elementary particle physics at MIT. Phipps worked for various agencies at the Pentagon and was later employed by the Naval Ordnance Laboratory. Since retiring, he has been writing and conducting physics experiments.

Olef Jefimenko from Electromagnetic Induction and Gravitation, Star City, West Virginia: Electret Scientific Company, 1992.

Renshaw and Kallfelz The following are excerpts in review from, "The Radiation Continuum Model of Light and the Galilean Invariance of Maxwell's Equations," by Curtis E. Renshaw and William M. Kallfelz, *Galilean Electrodynamics*, Jan-Feb. 1996.

Greenstein and Zajonc. Charles A. Yost discusses, "Do Quantum Jumps Occur at Well-Defined Moments of Time?" by George Greenstein, Astronomy Dept., and Arthur G. Zajonc, Physics Dept., Amherst College, MA., American Journal of Physics, vol 63, no 8, Aug. 1996, American Association of Physics Teachers.

George R. Talbott received a B.A. in medical technology from UCLA and a Sc.D. in physical

science and applied mathematics from Indiana Northern Univ. He has worked in the fields of medical laboratory technology, mathematical analysis, computer programming, teaching and technical writing.

Charles Bert Schreiber received a B.S. in physics from Southwestern Louisiana Inst., Lafayette, and rose to the rank of lieutenant in the Navy. He has held several administrative positions.

Richard Hull, comments taken from a letter written to a colleague.

THE PHOTON

Robert L. Carroll, page 14

The article was written (Jan. 1, 1991) to show that the photon is a wave motion limited to one wavelength in the longitudinal direction and a transverse circumference of one wavelength. This gives it the form of a cylinder without indication of any spread with distance of travel. Thus it has the characteristics of both wave and particle. The "either-or" controversy of wave or particle is avoided in this way. There is no indication that a medium is required for its propagation.

ELECTRIC PROPULSION PATENTS, 1928-1995, page 16ff

Compiled from original patent documents:

T. Townsend Brown, British Patent 300,311 (11 pages). "A Method of and an Apparatus or Machine for Producing Force or Motion." Filed Aug. 15, 1927, granted Nov. 15, 1928.

T. Townsend Brown, US Patent 1,974,483 (5 pages). "Electrostatic Motor." Filed Feb. 7, 1930, granted Sept. 25, 1934.

T. Townsend Brown, US Patent 2,949,550 (6 pages). "Electrokinetic Apparatus." Filed July 3, 1957, granted Aug. 16, 1960.

T. Townsend Brown, US Patent 3,018,394 (5 pages). "Electrokinetic Transducer." Filed July 3, 1957, granted Jan. 23, 1962

T. Townsend Brown, US Patent 3,022,430 (7 pages). "Electrokinetic Generator." Filed July 3, 1957, granted Feb. 20, 1962.

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ESA CONFERENCE SUMMARY - page 28

Charles A. Yost

ESJ Editor travelled to Milwaukee, Wisconsin, earlier this year to attend the 24th Annual Meeting of the Electrostatics Society of America. This article offers summaries of some of the presentations and general impressions of the conference.

IANAS CONFERENCE SUMMARY - page 32

Charles A. Yost

ESJ editor travelled to Denver, Colorado earlier this year to attend the Third International Symposium on New Energy, sponsored by the International Association for New Science. In *ESJ* 18, brief synopses of his impressions of some of the lectures were presented. In this issue selected papers taken from the conference proceedings were summarized.

ACTIVITY UPDATE - page 5

Paul Lander, Ron Kovac, Alfred Wakeman, Greg Hodowanec, Norman Wootan.

INFINITE ENERGY

Contents Summary for vol 2, no 9, July/Aug. 1996.

"Summary: Second International Conference on Low Energy Nuclear Reactions (ILENR2), Jed Rothwell, p 10.

"Nuclear Transmutation in Thin-Film Nickel Coatings Undergoing Electrolysis," Prof. George Miley, Dr. James Patterson, page 19. ILENR2 Preprint paper, also printed in *Journal of New Energy*, vol 1, no 3, Fall 1996.

"The Correa PAGD Reactor: Errata and Supplement," Mike Carrell, page 33.

"Cold Fusion and the Wright Brothers," Jed Rothwell, page 37.

"Electrical Power Generation Without Harmful Emissions - U.S. Patent #5,435,274," William H. Richardson, Jr. page 45.

"Table-Top Antigravity," Chris Tinsley, page 49.

"Reinventing the World: Social and Economic Effects of Cold Fusion," Charles Barr, page 66.

"Empowerment: Life Force of the Energy Revolution," Mike Fisher, page 67.

ABSTRACT..... of Infinite Energy Paper

"Mass Modification Experiment Definition Study," Robert L. Forward (Forward Unlimited, Malibu, CA), page 53.

AUTHOR'S ABSTRACT

The vacuum [aether] is proving to be one of the hottest topics in contemporary physics. It is a source of numerous effects: force fields that emerge from nowhere, particles popping in and out of existence, and energetic jitters with no apparent power source. Many researchers see the vacuum as a central ingredient of 21st Century physics. Some

even believe the vacuum may be harnessed to provide a limitless supply of energy. This report summarizes an attempt to find an experiment that would test the Haisch, Rueda, and Puthoff conjecture that the mass and inertia of a body are induced effects brought about by changes in the quantum-fluctuation energy of the vacuum. However, it was not possible to identify a definitive experiment. But, it was possible to identify an experiment that might be able to prove or disprove that the inertial mass of a body can be altered by making changes in the vacuum surrounding the body. Other experiments, which do not involve mass modification, but which teach something about the vacuum, were also defined and included in a ranked list of experiments. This report also contains an annotated bibliography and list of scientists active in the field.

COSMOLOGY NOTES

Gregory Hodowanec
Received November 1, 1996

A Special Test with Mini-MRA circuit FE-8

A. Background

It was my intention to build a Mini-MRA circuit, FE-9, which would incorporate some facets learned to date, and which then could possibly lead to a "stand alone" circuit. Before doing so, I wanted to try Ckt. FE-8 (as is) operating with a single rechargeable cell. It was determined that a Nicad AAA cell (at 1.2 volts) would not operate the GW-type oscillator (as built into FE-8) but a 1.5 volt cell could possibly work okay. I had some new Rayovac "Renewal" AAA cells on hand and decided to try this cell, even though I know nothing of its recharging characteristics. The "renewal" cell was found to operate Ckt. FE-8 okay and a test was started on 9-12-96. As shown in the test data curve below, it took about 150 hours of operating to stabilize the Mini-MRA system at a DC output of about 1.5 volts for this cell. However, it was noticed that the oscillator would at times "drop out" and have to be re-started. This was eventually determined to be due to operation of the oscillator too close to its upper frequency limit.

When the oscillator drops out (possibly due to some temperature drift effects since no zero-temperature coefficient components were used), it would not restart by itself at the low operating voltage used. Another unusual problem which occurred was

"discharge effects" apparently related to a tremendous overhead lightning storm. After the storm had passed on, it was not possible to recharge the cell close to its former voltage level! This may have been related to some physical changes in the cell caused by this storm? Finally, after about 900 hours of unit operation, it was decided to operate the MRA at a lower frequency, where the power output could be lower but the oscillator more stable. This proved to be a wise move, since the system remained stable and self-sustaining for another 150 hours, and probably would have remained there at 1.39 volts for many more hours. However, on 10/29/96 I discontinued this test so that I could use the 7611 device (only one remaining) in the proposed Ckt. FE-9 test.

B. Conclusions:

1. It is surmised that if operation of the 7611 GW-oscillator had been maintained at a lower frequency, where power output was lower but the oscillator was more stable, then perhaps this test might have remained at 1.50 volts (self-sustaining) for possibly at least 2000 hours or more. However, there would be nothing I could do about the effects of that local thunderstorm on this AAA cell! Possibly there might have been some scalar field effects which 'hurt' the recharging nature of the "Renewal" cell?

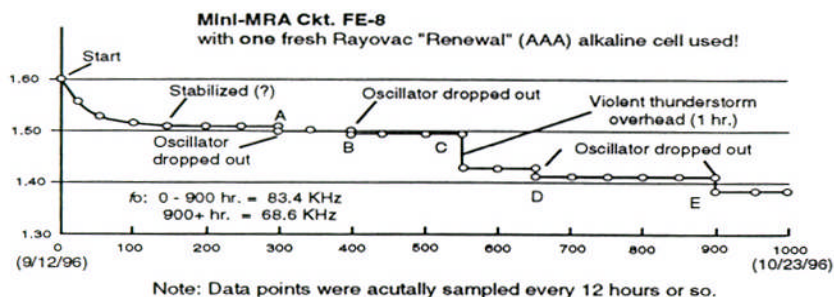
2. It was also determined that the chosen oscillator frequency probably must be well-centered on one of the many natural resonant frequencies in this universe so as to properly 'lock on' to this frequency. Operation between two adjacent natural frequencies could result in a periodic 'shifting' between the two resonances and thus result in a somewhat 'unstable' oscillator performance. Such multiple frequency effects are readily seen on an oscilloscope or frequency meter. However, such effects did not seem to 'hurt' MRA performance.

3. Work is slowly proceeding on Ckt. FE-9 and tests might be underway in November. Any progress made will be reported to you.

SOME FINAL REMARKS

The Mini-MRA Ckt, FE-9 will be operated in the range of 3-4.5 volts, initially started by 2 or 3 cells. The Mini output voltage will be doubled (same as in FE-9) but it will also charge a storage capacitor (a miniature .1F 'keep-alive' unit, such as used in some C-MOS circuits). When stable operation is achieved, the cells will be disconnected from the circuit and it is hoped

that the storage capacitor will maintain the operation until the unit establishes another self-sustaining level. Some previous tests using much smaller storage capacitors showed too fast a voltage drop to maintain 'stand alone' operation. Perhaps, FE-9 will succeed in this quest (demo)?



As usual, Cosmology Notes are intended to inform you of some work going on here and 'induce' you to look further into these remarks. I strongly believe in the reality of Rhythmic cosmology, and that it will eventually provide the knowledge to 'harness the wheel-works of the universe,' as Tesla put it. However, I cannot do all this alone -- will you help?

REMARKS

1. It took about 150 hours of operation to stabilize this test at ≈ 1.5 volts.
2. Initially, when the oscillator would drop out (due to operation too close to upper frequency limit for this oscillator) it could almost be restored to its initial voltage point on re-start of the oscillator. However, after the battery degradation due to a very violent thunderstorm (≈ 550 Hr), it was more difficult to recover battery voltage.
3. At 900 hours of operation, the oscillator frequency was backed down a bit from the maximum charging level. At this level, the cell voltage remained fairly constant at about 1.39 volts till about the 1150 hour point, when this test was discontinued. (10-29-96)

HERBAL FUEL FRAUD FOUND OUT

Courtesy of M. Srinivasan

"Herbal Fuel Maker Caught Cheating by Scientist," *The Times of India*, October 3, 1996.

It was a scientist smelling something fishy during the experiment at Madras IIT last week who caught Raimar Pillai, the man who claims he could produce petrol from herbs, red-handed with a stirrer which turned out to contain a kerosene-like substance.

A scientist present at the validation test told this newspaper that Mr. Pillai was to have produced his fuel from a liter of water in the presence of nine scientists appointed by the Department of Science and Technology (DTS). The vessels were provided by the IIT and the experiment conducted as per Mr. Pillai's instructions, the scientist said.

The experiments started with water heated to 98° C. It went on for 51 minutes and at the end of the experiment, water remained water, the scientist said. It was then that Mr. Pillai wanted to use his stirrer. The scientists agreed, but again nothing happened "because the temperature of the water had gone down during the 51 minutes of the experiment."

The scientist said that Mr. Pillai wanted to heat the water again. And as this was being done, when the temperature was 74° C to 75° C, a scientist who got a "faint smell" of kerosene pulled out the stirrer. "Lo, and behold. A liquid was oozing through a hole in the stirrer," he said. "The wax used to seal the hole had melted when the temperature went up."

"The 14-inch long metallic stirrer could hold about 40 cc of liquid," the scientist said. Mr. Pillai was to have produced about 300 cc of fuel from one liter of water.

Asked how 40 cc of fuel could have helped Mr. Pillai's case, the scientist said he could have claimed that the yield was poor on that day. "We could not have denied a patent if some petrol had been produced," the scientist added. When Mr. Pillai was caught while "trying to do a P.C. Sorcar" he looked "completely dazed," the scientist said.

He said the entire group of scientists were sad, because had the experiment succeeded, it would have been a happy day for the nation. "But what we witnessed was an attempt to cheat in broad daylight," he said.

But did the scientists offer him another chance? "That question did not arise because the whole experiment turned out to be a trick. Even if nothing had been

produced (without resort to manipulation) he would have been given another chance."

Mr. Pillai has, however, refuted the DST's charge that he had used "dishonest" means to produce fuel and said that he was prepared to demonstrate his experiment before any institution. "I want an assurance from scientists that they will not reveal how I make herbal petrol, then I will reveal the process to them," he told journalists at the airport on his way to Hyderabad to take part in a function organized to honor him.

Mr. Pillai said he would also take the opportunity to meet Andhra chief minister N. Chandrababu Naidu. About 15 days ago he had performed the experiment in the presence of Tamil Nadu chief minister M. Karunanidhi at the secretariat.

Mr. Karunanidhi had said the government would take steps to enable him to produce 50 liters of petrol a day. Land would also be allotted. The chief minister had presented a Parker pen to Mr. Pillai, apparently impressed by his performance.

APPARATUS & EXPERIMENT EXPLAINED

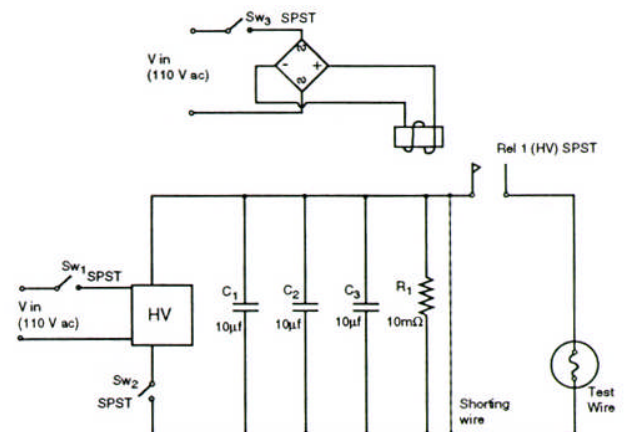
Timothy E. Raney, "Experimental Exploding Wire Apparatus," *Tesla Coil Builders Assoc. News*, vol 13, no 1, 1994, pp 13-15.

INTRODUCTION: The apparatus described can store a potentially lethal electrical charge. Proper safety precautions must be observed. Operate the device on an insulated surface and trigger it remotely. Keep one hand in your pocket as Tesla advocated and do not wear rings or a watch. A fragmentation hazard exists from the exploding wire and requires adequate shielding.

The objective of these experiments is to develop a high voltage capacitor discharge device for studying exploding wire (EW) phenomena. The device demonstrates principles of storing and discharging a high potential through a conductor and observing the effects. The theory is based on passing a very short (microsecond) duration high voltage pulse through a conductor; this pulse instantaneously causes the conductor to undergo a phase change from solid to plasma accompanied by a high intensity shockwave.

DESIGN: The apparatus consists of a 3 kVDC, 50 microamp (μa) power supply connected in parallel with a 30 μf capacitor bank, a high voltage SPST relay and a test wire holder. A 10 megohm ($\text{M}\Omega$) safety resistor is connected in parallel and the high voltage relay is remotely actuated. The circuit connections are made using short copper bussbars that decrease circuit inductance; low circuit inductance is essential for generating a suitably short pulse.

The power supply provides 3 kVDC to the circuit. A safety switch (SW2) is connected between the capacitors and the power supply. This is a conventional knife switch and isolates the power supply from high voltage oscillations in the circuit upon firing. The capacitors are three 10- μf oil-filled units rated for 3 kV DC connected in parallel with bussbars (see schematic).



The high voltage relay (REL 1) has heavy contacts for switching the high voltage pulse (no specs.). This relay is remotely activated by the momentary-on switch (SW3) connected to its own power supply. The 10-megohm safety resistor slowly discharges the capacitors if the shunting rod is not used (the capacitors maintain a residual charge). The shunting rod consists of a long insulated handle (phenolic) with a six-inch brass rod mounted on one end. The shunting rod is placed across the bussbars of the last capacitor after firing. The shunting wire is a short length of #10 copper stranded wire with solderless connectors and is connected across the terminals of the last plexiglass block drilled for two metal binding posts.

OPERATION: The charging procedure consists of ensuring the shunting wire is in place and the power supply is not plugged in; the test wire is placed in its mount and a "witness pad" (white card stock) is placed under the wire; a shield is then installed

around the mount (PVC pipe coupling). The power supply switch (SW1) and isolation switch (SW2) are in the "off" position; both HV and relay power supplies are plugged in; the isolation switch is closed; the shorting wire is removed from the bussbars; and the HV power supply switch is closed to begin the charging sequence. The capacitors are charged for a given duration, the power supply is turned off and the isolation switch is opened. The firing sequence consists of depressing the momentary-on switch (SW3) to energize the HV relay, causing the test wire to detonate.

After discharging the apparatus, the capacitors are discharged with the shorting rod, the safety wire is emplaced and the power supplies are disconnected. The PVC shield is removed and the witness pad examined.

RESULTS: A total of 15 tests were conducted. These tests represent initial function tests using 28 gauge nickel wire. These tests should be considered preliminary in nature pending further experiments.

The nickel wire test samples were 1.75" long with a resistance of 2.0 ohms (measured at 70° F with a VOM by placing probes at each end of test wire). The capacitors were charged between 60 and 85 seconds. High order detonation occurred in each case and was ascertained by comparing with known witness pad results [1,2]. Witness pads recorded the firing event in that the nickel plasma was deposited on the pad.

DISCUSSION AND CONCLUSION: The 60 second charging time consistently resulted in nickel wire detonation upon fire pulse initiation (verified by additional tests). Witness pad records indicate an approximate 5 μsec. pulse duration [1,2]. Significant variations were not evident in witness pad patterns based on charging time.

Power to the test wire was calculated as:

$$\frac{E^2}{R} = \frac{9 \times 10^6}{2 \text{ ohms}} = 4.5 \text{ megawatts (4)}$$

System energy was calculated as: Joules = 1/2 CV; (0.5) (30 μf) (9.0) = 135 Joules [3]. The equations above assume the system is fully charged. However, the analysis indicates the system is only being charged to a fraction of its maximum (theoretical) capacity, i.e. to 0.145 joules for the 60 second and 0.287 joules for 85 second charging time [7]. The RC

time constant was calculated as (60 megohm-ESR for power supply) (30 μf) = 1800 seconds, 60/1800 = 30 mins. This result also indicates the system is only being operated at a fraction of its potential. In any case, detonation of the test wire does occur based on my observations above and other research done (see references).

Additional experiments are planned using the apparatus described, such as the generation of high-density magnetic fields and studying their affects, and the study of plasma generation and acceleration.

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3. A.D. Moore, Electrostatics: Exploring, Controlling, and Using Static Electricity, Doubleday & Co., Garden City, NY, (1968).
4. R.E. Iannini, Build Your Own Laser, Phase, Ion Ray Gun and Other Working Space-Age Projects, Tab Books, Inc., blue Ridge Summit, PA, (1983).
5. J. Freau, Personal correspondence, May 19, 1993.
6. C. Beaulieu, Personal Discussions, April, 1993.
7. C. Grassano, Capacitor Charge/Discharge Analysis, May 5, 1993.
[See also Graneau & Graneau, Newtonian Electrodynamics, c 1996, World Scientific.]

SOURCE OF PARTS/SUPPLIES

1. Power Supply: Fair Radio Sales, Co. Inc., 1016 E. Eureka St., P.O. Box 1105, Lima, OH, 45802, (#ACE-HV3000) Phone: 419-223-2196
2. Capacitors: Fair Radio Sales and/or Skycraft Surplus, Inc., P.O. Box 536186, Orlando, FL 32853-6186 (Plastic Caps, Inc., part #LK30-106Y)
3. High Voltage Relay: Skycraft Surplus (J. Pollak, Inc., part #REL-908).
4. Misc. hardware/components/HV resistor: Local hardware store, Radio Shack, R&D Electronics, Inc., 1224 Prospect Ave., Cleveland, OH 44115.

LETTERS

LETTER FROM DR. PETER GLÜCK

Dear Hal,

This is my message to vortex; it was sent to Bockris and Miley, too, at ICCF-6. Please use it as you wish.

Best regards, Peter Glück

Dear Vortex Fellows,

Actually I am able to feel a lot of empathy toward Martin's problem. The existing high energy nuclear reactions paradigm is not compatible with the new phenomena and we do not have yet an alternative, a LENR paradigm.

On Sept 25, 1996 Martin wrote (quoting from memory):

-The miracles occurring in a transmuting cell:

- a) The reaction rate is much too fast, with many orders of magnitude;
- b) There is no ionizing radiation;
- c) No radioactive nuclei appear (Note: anyway stable isotopes are dominant in almost all experiments-- exceptions Savvatimova et al, Wolf.)

The situation really seems impossible and Martin, as well as other inquiring minds are perfectly justified to get a solution; ERROR is the easiest and most handy. However experimental data are accumulating and both branches of the dilemma are now equally impossible- in the frame of the HENR paradigm. Because I am working in an institute specialized in isotopes, I am very motivated to find a solution.

Because my other speciality is management of technology and I am very familiar with the problems of creativity I will try an inter (trans)-disciplinary approach to the problem.

(For those interested in a holistic view of the field perhaps the following paper will be of great use: "Isotopicity, Implications and Applications," by Alexander A. Berezin, in *Interdisciplinary Science Reviews*, 1992, vol 17, no 1 pp 74-80. BTW, if somebody knows Prof. Berezin

<berezin@mcmaster.ca> or <berezin@mcmaster.ca> McMasterCA, (an authority and expert in isotopes), it would be interesting to ask his opinion. In 1989 Berezin has published a paper (abstract?) re: CF but later has not been active, as far as I am informed.)

A Change of Paradigm is Necessary.

You get good advice for such an action in the book: "PARADIGMS-the business of discovering the future" by Joel Arthur Barker. For managers, in order to get positive change, you have to pick out which obviously unchangeable step could improve your business. When it is identified you have to change it; it was only seemingly impossible. If we try to find such a fixation in Martin's list we get the word - REACTION. As long as HENR, hot fusion, hot fission reactions take place, the nuclei are indestructible and the results obtained HAVE to be erroneous.

We have to find another class of nuclear reactions. In the limits of linear logic, the solution offered by me is unique.

Using metaphors.

The use of metaphors for creativity is well known, at least in theory.

One of my favorite works illustrating this method is Hannu Vanharanta's Dr. Thesis "Hyperknowledge and Continuous Strategy in Executive Support Systems," Abo Univ, Finland 1995. The functions of the metaphors are cleverly applied in order to start the process of transformation on the line: metaphor-analogy-model-theory.

Metaphors can perform four separate but related functions:

- they are expressive, throwing new light on the target domain;
- they are exegetic, trying to describe and interpret complexity;
- they are explanatory, explaining and predicting;
- they are exploratory, suggesting research directions and activities.

Actually, we (vortexan cold fusionists) have a wonderful metaphor here, it is Tinsley's idea that:

Cold Fusion is for Hot Fusion what Biochemistry is for Chemistry.

(Chris, please give a more elegant formulation, thanks!)

If we consider only essential processes as photosynthesis and nitrogen fixation, which are not reproducible with "human" technologies, we see that these processes are incredibly complex. I am systematically reading all the papers on these and related subjects in *Chemical Engineering News*, *Physical Chemistry*, *Nature*, *Science*, *New Scientist* as an exercise of complexity and humility. Our knowledge is very primitive, we are just crawling out from the Middle Ages.

Anyway, the Tinsley Metaphor suggests that we have to pay a high price, that of complexity, for attaining low energy nuclear reactions. The message of the metaphor is: do not try to find simple explanations/models/theories. And: the solution is far from what you know now!

The House Metaphor.

We know from the HENR paradigm that the nuclei of the stable isotopes are solid, strong edifices and we need high energies to break them. You need great heavy rocks, bombs, or steel balls to destroy a house (have seen a lot in the Ceausescu era when family houses have been systematically demolished and people forced to go in great concrete block buildings where control by the secret police was easier). Now, little pebbles are not efficient, they would not make much damage (metaphorically thinking, the HENR people are right), THOSE reactions will not work. I think the OTHER reactions are analogous to something eating out the mortar between the bricks, a much slower destructive process -- a real one. I had to solve one case in the frame of my consulting practice, when a dreadful sort of mildew (*Merulius Lacrymans*) coming from infested wood used for the new parquet began to penetrate the walls. I had to use a complex mixture of fungicides to kill the beast.

For the nuclei, the metaphor suggests a NEUTRON EXTRACTION process. Some entities are "attacking" the nuclei and capturing the neutrons. It is well known that the number of neutrons per number of protons ratio is steadily increasing as the atomic number is increasing; the nuclei will be thus destabilized and fragmented. What entities can do such a job? I think the best candidates are energy deficient protons and deuterons, strongly associated with their electrons. "Hungry" p's and d's! Honi soit qui mal y pense!

The most remote (far from the present paradigm) is the Neal Gleeson process, by a special type of electrolysis, thorium is fissioned in mercury and neon, tungsten can be fissioned symmetrically in two atoms of rubidium or unsymmetrically in cadmium and iron, **in these cases 12-15 neutrons remain in excess** and have to be "consumed."

In other cases, probably the cluster structure of the nuclei add a degree of complexity. The fragments thus obtained are all stable as such or after recombination; the daughter nuclei are both smaller and greater than the mother nuclei. Perhaps these are multi-body reactions with a complex mechanism, working step-wise and much slower than the HENR processes. The active hydrogen isotopes are coming from or interacting with the energetical vacuum, they work in packs and create an energy deficient environment in which only stable nuclei are created. Using Mitch Swartz's terminology, it has yet to be established how are *de novo* nucleosynthesis and excess enthalpy correlated; I think there is no causal relationship between them.

As I have shown in all my papers, these processes are local and catalytic.

I am convinced that my "House Metaphor" is a part of the truth. After getting the complete data from LENR2 and ICCF-6 I will try to work out a theory.

Dr. Peter Gluck

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LETTER FROM S.A. KEYS

Gentlemen,

I understand that a Swiss Company has recently succeeded in building and marketing a home generator that produces free electricity. It's stock is said to have soared from 200 Franks to 2,000 Franks, and is expected to increase another tenfold in the near future. Can you tell me the name of this stock? Also, any info would be appreciated. I really didn't know where to turn for information like this.

Any help you can give me would be appreciated.
Thank you very much.

Sincerely,
/s/ S.A. Keys
P.O. Box 214
Wilkesboro, NC 28697-0214

[Readers, can you help? We haven't heard of this company.]

LETTER TO EDITOR

Dear Friends,

I hope this letter finds you well, and in good spirits. My name is Nikolai Zarick, unfortunately I am incarcerated. But I am investing my time by designing an alternative architectonic system called "METATECTURE" (Meta: beyond, both/and, along with, combining form; ecture: from architecture). With so many new and revived, high and low tech. technologies in use these days, I saw a need to create a new term, for when they are used together. (feel free to use the term.)

My version of METATECTURE amalgamates airform and armature architecture, strawbale, cordwood, rammed earth, adobe, bricolage, soft energy, edible/perennial xeriscaping, treatment wetlands, wattle and daub, forest farming, aquaculture, synchronicity, and other sustainable technologies into a "green," "whole," viable multi-tudinous international community.

I have been desperately struggling to find resources, research, study materials, periodicals (back issues and complimentary subscriptions), or just an encouraging word. I will be eternally grateful for any new or used literature or information in heterogeneous though interconnecting topics, that hopefully you can share with me; or perhaps you know of someone who can help me, and help others, through my work.

I apologize for sounding so presumptuous and mendicant, but I am working with a zero budget, and striving against the tides of my imprisonment. I hope that you will open your heart to assist me, but whatever you decide, thank you for your time, and the good work that you are doing.

With Admiration
/s/ Nikolai Zarick #162110
C.C.I.
900 Highland Ave.
Cheshire, CT 06410-1698

P.S. Please address all correspondence with your company/group's name.

Editor's Note:
Dear Nikolai,

We are willing to help those who repent and are willing to help themselves. We have entered your name into our subscribers list for a free year's subscription to *New Energy News*.

Hal Fox, Editor

Meetings

INTERNATIONAL SYMPOSIUM ON CONSCIOUSNESS, NEW MEDICINE AND NEW ENERGY

Yomiuri Hall, Tokyo, Japan
November 21-22, 1996

An International symposium to discuss and present research results in such areas as consciousness phenomena, holistic medicine, integration of Western and Eastern medicine, and new energy technology. The sponsor is the Japan Green Cross Society. 18 key-note speakers have been determined, among them 5 are overseas speakers, including Paramahansa Tewari. Conference chairman is Dr. Shiuji Inomata, and overseas advisory board consists of Dr. W. Harman (USA), Dr. David Lorimer (UK), and Dr. Beverly Rubik (USA). Participation fee is approximately US\$ 185 (¥20,000).

Contact: Mr. Tetsu Nagano, Japan Green Cross Society

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GLOBAL SCIENCES CONGRESS

The honor of your presence is requested at the 15th Year Mid-Winter, **GLOBAL SCIENCES** Congress at the Doubletree Hotel, Tampa Airport Westshore, 4500 West Cypress, Tampa, Florida 33607, January 16-20, 1997

Registration: for entire Congress \$160.00 at the door; early bird rate \$125.00 (before December 15, 1996). First 200 early birds have front set options, daily rates \$20.00 per session (am, pm, or evenings) available at the door. To register, send name, address & Phone/fax to: **GLOBAL SCIENCES**, 669 Peoria #345, Aurora, CO 80011, phone: 303-343-6461, Fax 303-344-1578

Commercial Column

The following companies (listed alphabetically) are commercializing cold fusion or other enhanced energy devices:

COMPANY: PRODUCT

American Pure Fusion Engineering and Supply: Information and trouble-shooting for the fusion research and development industry. Developing "Fullerene Fusion Fuel™." Salem, Oregon. The president, Warren Cooley, can be reached at 1-800-789-7109 or 503-585-6746. Email to: Coolwar@aol.com

CAI, Inc., CAI has acquired rights to develop and produce a new-type of thermal power based on the controlled production of clean nuclear reactions from micro-miniature tokamaks (provided by nature). Contact through FIC, Voice 801-583-6232, Fax 801-583-2963.

CETI (Clean Energy Technologies, Inc.): Developers of the Patterson Power Cell™. Dallas, Texas. Voice 214-982-8340, FAX 214-982-8349.

Clustron Sciences Corp.: New energy research consulting and information. Contact: Ron Brightsen, 703-476-8731.

ENECO: Portfolio of intellectual property including over thirty patents issued or pending in cold nuclear fusion and other enhanced energy devices. Salt Lake City, Utah.

Contact Fred Jaeger, Voice 801-583-2000, Fax 801-583-6245.

E-Quest Sciences: Exploring The Micro-Fusion™ process. Seeking qualified research partners for their sonoluminescence program. Contact Russ George, FAX 415-851-8489.

Fusion Information Center (FIC): Research and development of new energy systems. The world's most complete resource depository for cold fusion research information, as well as other new energy research including zero-point energy; space energy research; electronic, electromagnetic, and mechanical over unity devices and transmutation. We are the publishers for *Fusion Facts*, *New Energy News*, and the *Journal of New Energy*. Voice 801-583-6232, Fax 801-583-2963. Contact Hal Fox.

Holotec AG: Clean Energy Technology, contact André Waser, Gen. Mgr., Bireggstrasse 14, CH-6003, Luzern, Switzerland. Phone 011 41-41 360 4485, or Fax 011 41-41 360 4486.

Hydro Dynamics, Inc.: Hydrosonic Pump, heat-producing systems using electrical input with thermal efficiencies of 110 to 125 percent. Rome, Georgia. Contact James Griggs, Voice 706-234-4111 Fax 706-234-0702.

JET Energy Technology, Inc.: Design and manufacture of π -electrode systems, calorimeters, and associated equipment and systems. Consulting regarding radiation, materials, and other scientific and engineering issues. Weston, MA. Contact Dr. Mitchell Swartz, Voice 617-237-3625. Fax 617-237-3625.

Labofex, Experimental and Applied Plasma Physics: R&D of PAGD (Pulsed Abnormal Glow Discharge) plasma technology. Applications under development include portable power supplies, electric vehicles and autonomous housing. Licensing. Ontario, Canada. Contact Dr. Paulo N. Correa. Tel 905-660-1040 Fax 905-738-8427

Magnetic Power Inc.: Solid-state, heat to electric transducers, for temperatures up to 300°F (low energy nuclear reactions, waste heat, etc.) featuring Ultraconductors™ under development by ROOTS, a subsidiary. Sebastopol, CA. Contact Mark Goldes, voice 707-829-9391, Fax 707-829-1002.

Nova Resources Group, Inc.: Design and manufacture ETC (Electrolytic Thermal Cell); EG (commercial power cogeneration module); and IE (integrated electrolytic system). Denver, CO. Call Chip Ransford, Phone 303-433-5582.

UV Enhanced Ultrasound: Cold Fusion Principle being used for an ultrasonic water purifier. Hong Kong. FAX 852-2338-3057.

"YUSMAR"- Scientific-Commercial Company: manufacture, licensing, research and development of water-based generators: thermal (5 sizes), electrothermal (up to 2 MW), and 'quantum' types. President: Dr. Yuri S. Potapov, 277012 Kishinev, Moldova. Phone and Fax 011-3732-233318.

Zenergy Corporation: Founded in 1996 to facilitate the introduction of commercially viable energy alternatives. 390 South Robins Way, Chandler, AZ 85225. Contact Reed Huish: 602-814-7865, Fax 602-821-0967, e-mail: info@zenergy.com

Note: The Fusion Information Center has been acting as an information source to many of these companies. We expect to augment our international service to provide contacts, information, and business opportunities to companies considering an entry into the enhanced energy market.

INFORMATION SOURCES

Academy for New Energy (ANE) is a subsidiary organization to the International Association for New Science, which has specific goals directed toward the field of alternative and "New" energy research. 1304 S. College Ave., Fort Collins, CO 80524. Tel. 970-482-3731

ANE Newsletter, quarterly publication of ANE, providing an open forum for discussion, and disseminating newsworthy and inspirational information on invention and new energy. Edited by Robert Emmerich.

Advanced Energy Network Newsletter, quarterly, a reprint of articles and papers from other energy publications, with book reviews and worldwide conference list. Advanced Energy Network, P.O. Box 691, Rondebosch 7700 Capetown, Rep. South Africa.

Cold Fusion, monthly newsletter, edited by Wayne Green, 70 Route 202N, Petersborough, NH 03458.

Cold Fusion Times, quarterly newsletter published by Dr. Mitchell Swartz, P.O. Box 81135, Wellesley Hills MA 02181. Home Page: <http://world.std.com/~mica/cft.html>

Cycles, a R&D newsletter, published by Dieter Soegemeier, Editor, GPO Box 269, Brisbane, QLD.4001, Australia. Phone/Fax: +61 (0)7 3809 3257.

Electric Spacecraft Journal, quarterly, edited by Charles A. Yost, 73 Sunlight Drive, Leicester, NC 28748.

Fusion Facts monthly newsletter. Salt Lake City, UT. 801-583-6232, also publishes **Cold Fusion Impact** and **Cold Fusion Source Book**. Plans on-line database access.

Fusion Technology, Journal of the American Nuclear Society, edited by Dr. George Miley, publishes some papers on cold nuclear fusion. 555 N. Kensington Ave., La Grange Park, IL 60525.

Infinite Energy, new bi-monthly newsletter edited by Dr. Eugene Mallove (author of **Fire from Ice**), P.O. Box 2816, Concord, NH 03302-2816. Voice: 603-228-4516. Fax: 603-224-5975
E-mail 76570.2270@compuserve.com

Institute for New Energy (INE), organization to promote and help find funding for new energy research.

Home Page: www.padrak.com/ine/ contains many important scientific papers and current reports on all areas of research.

E-mail: ine@padrak.com Salt Lake City, Utah.
Voice 801-583-6232, Fax 801-583-2963.

New Energy News monthly newsletter for INE, highlighting the research and development in the worldwide new energy arena. Edited by Hal Fox.

Journal of New Energy, quarterly, presenting papers representing the new areas of energy research, leading-edge ideas in the development of new energy technology, and the theories behind them. Published by the Fusion Information Center, Inc. Editor: Hal Fox.

KeelyNet BBS - Science and health oriented information exchange that specializes in nonstandard research, much of it on new energy. Jerry Decker, 214-324-3501
Internet: www.keelynet.com E-mail: jdecker@keelynet.com

Planetary Association for Clean Energy Newsletter, quarterly, edited by Dr. Andrew Michrowski. 100 Bronson Ave, # 1001, Ottawa, Ontario K1R 6G8, Canada. Web page: <http://energie.keng.de/~pace>

Now available: *Clean Energy Review*, a technical and scientific discussion on nuclear fuel wastes disposal. Discusses transmutation as one possible solution. \$5 U.S. and Canadian, \$7.50 other countries.

Space Energy Journal, quarterly, edited by Jim Kettner & Don Kelly, P.O. Box 1136, Clearwater, FL 34617-1136.

The above list of commercial and information sources will be growing. New listings will be added as information is received. Send information to *NEN*, P.O. Box 58639, Salt Lake City, UT, 84158.

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NOW AVAILABLE

Journal of New Energy

Volume 1, Number 3, Summer 1996 issue will be of the Second Low-Energy Nuclear Reactions Conference, Sept. 13-14, 1996, College Station, TX. Available October 1996.

The *Journal of New Energy* is a new professional journal devoted to printing peer-reviewed professional papers devoted to new-energy experiments and theories. This journal is devoted to rapid review and publishing of important new-energy papers. The price for this quarterly journal is \$150 per year with each issue airmailed. The journal is abstracted by *Chemical Abstracts*, *Metals Abstracts*, and *Engineering Information*.