



New Energy News

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UNIVERSITY OF ILLINOIS & CETI JOIN IN REVOLUTIONARY COLD FUSION DEMONSTRATION

By Hal Fox

Faculty and students of the University of Illinois at Champaign-Urbana, Illinois joined with Clean Energy Technology, Inc. of Dallas, Texas, to produce a laboratory demonstration of a "new hydrogen energy" reactor. Based on the patent of James Patterson, the U/Illinois version of the **Patterson Power Cell™** demonstrates strong commercial potential.

New Hydrogen Energy?

"What's in a name? that which we call a rose
By any other name would smell as sweet."
...Shakespeare, *Romeo & Juliet*

A commercial cold fusion cell is defined as a cell that produces at least three times the thermal power as compared to input electrical power. At three times, the cost of thermal power from electricity matches the cost of thermal power from natural gas. **The U/Ill - CETI laboratory demonstration cold-fusion cell provides over ten times the thermal power as input electrical power!** This thermal power production exceeds the performance of a similar Patterson cell demonstrated in April 1995 at the fifth International Conference on Cold Fusion.

In the laboratory demonstration cell, the electrolyte is circulated through the cell. The output power production is calculated from the temperature rise of electrolyte and the volumetric rate of flow. The ΔT in this cell is about ten degrees Centigrade. The excess power generated is about five watts. It is expected that as this type of cold fusion reactor is designed within a pressure vessel, the temperature will be raised and the wattage of the reactor can be raised to practical levels.

Jim Reding, the president of CETI in an interview granted to *Fusion Facts*, stated that his company is appropriately funded for this stage of development.

CETI, according to Reding, is seeking to hire qualified metallurgists, nuclear physicists, and electrochemists for further development of New Hydrogen Energy devices and systems.

The demonstration was provided to attendees at the Symposium on Fusion Energy '95, held at the Chancellor Hotel and Convention Center in Champaign, Illinois, Sept. 30 to Oct. 5, 1995. Over five hundred papers were proffered for this conference. A few cold fusion papers were approved for presentation in a Thursday morning poster session on October 5.

[For further information on the CETI demonstration and research, contact them at 14332 Monfort, Suite 6302, Dallas, Texas, 75240, USA, phone 214-458-7620, Fax 214-458-7690.]

On October 2, 1995, a panel of experts presented the latest information on the progress made in the continuing saga of the development of cold nuclear fusion. Dr. Edmund Storms (ENECO), Dr. Dennis Cravens (ENECO), Dr. Yeong Kim (Prof. at Purdue), and Dr. Howard K. Birnbaum (Univ. of Illinois) constituted the panel. Dr. Birnbaum was the token cold fusion opponent for this panel since he was a member of the notoriously-negative Cold Fusion Committee of the Energy Research Advisory Board (ERAB), which was responsible for denying DOE funds for the further study of cold fusion. Dr. Huizenga, Co-Chairman of the ERAB committee, wrote the book Cold Fusion, the Scientific Fiasco of the Century. Now, with a working demonstration of a cold fusion (new hydrogen energy) reactor producing over ten times as much thermal power as input electric power, it is difficult to discuss how cold fusion doesn't work!

'EUREKA' - AN ENERGY ECHO FROM A CATHODE?

By Harold Aspden, Received 28 Sept. 1995

In the September 1995 issue of *IEE REVIEW*, the monthly Journal of the Institute of Electrical Engineers in U.K., there is the story of the success of Professor Alec Broers who, after a career in research with IBM in U.S.A., returned to U.K. as Professor of Electrical Engineering at Cambridge, became Master of his old college, Trinity, and has now become Vice Chancellor of the University.

The account includes the following text: "In 1965 he moved to IBM's Thomas J. Watson research laboratories at Yorktown to work on the development of the world's first gigabit [sic] read-only memory... The huge data sets involved - mainly results from tests from Los Alamos - required that the system should operate 24 hours a day, 7 days a week. Unfortunately, the tungsten cathodes had the habit of burning out after little more than 20 hours. A sustained development effort increased the tungsten lifetime to 80 hours. However, this figure was soon to be shattered by Broer's development of the first practical cathode using lanthanum hexaboride, which, in its initial test, ran for over 1,000 hours with no visible physical deterioration. 'A real eureka achievement' according to Broers. Lanthanum hexaboride remains in use as an electron microscope cathode material to this day."

I was interested in this story because the main part of my career was with IBM and I had also been a research student at Trinity College, Cambridge, my Ph.D. being also in electrical engineering. That caused me to read the above text rather closely, whereupon my attention was arrested by the reference to 'lanthanum hexaboride.' Having recently, in *New Energy News* (at p 1 and p 15 of the August 1995 issue and at p 1 of the September, 1995 issue), pointed out how warm superconductors and magnets share a common feature in their molecular compositions, based on a near-to-102 atomic mass unit quantity, I just wondered if cooling involving heat conversion to electricity in the predicted 'supergraviton' resonance occurs also in that cathode material discovered by Broers. Maybe that could explain why the lanthanum hexaboride cathode is so durable.

I had never heard of that substance before, but I rushed to check its molecular mass as noted in chemical reference data. I found that lanthanum hexaboride LaB_6 is listed as having a molecular mass

of 203.78, which is twice 101.89. That caused me to exclaim "Eureka!"

As more and more evidence of this kind comes to light, this must add to the suspicion that this mass-resonance property is a way of defeating the second law of thermodynamics. Surely, therefore, we can hope that some corporate venture such as IBM might direct effort at the clean energy challenge of generating electrical power from ambient heat by asking a new generation of 'Broers' to eschew this particular problem.

Fusion Briefings

COLD FUSION IS A LIVE ISSUE

By Harold Aspden (Sabberton Research, England)

On April 15, 1989, a few days after Fleischmann and Pons announced the excess heat discovery indicative of a cold fusion reaction, I applied for a patent at the British Patent Office. It was later granted as GB Patent No. 231,195 and is now assigned to ENECO.

The patent explained why a cold fusion reaction might be triggered by a mass resonance effect as deuterons adsorbed into the palladium cathode 'fine-tuned' the effective atomic mass of deuterated palladium within the cathode to a value close to 102 plus 6.60 atomic mass units (amu). I referred to this as a 'supergraviton resonance' at 102 amu together with a lower 'graviton resonance' at 6.60 amu, the latter being effective for quantum dynamic interactions involving light atomic elements.

Readers of the August 1995 issue of *New Energy News (NEN)* (p. 1) will have seen how the 102 amu resonance is relevant to warm superconductivity and permanent magnets. Also, in the September 1995 issue of *NEN* (p. 1), I took the theme further by showing why samarium cobalt alloys form powerful magnets. Arising from a discussion with Walter Rosenthal since that August publication, in which the even more powerful neodymium-iron-boron magnets were mentioned, I need to comment on that also. Briefly, neodymium has an atomic mass of 144.24 amu but it involves a spread of isotopes from 142 to 150 and these are not concentrated near the mean mass

value. Indeed, the 142 isotope accounts for 27.2% whereas the 146 isotope accounts for 17.2%. Adding 56 nucleons of an iron atom to the 146 isotope gives twice 101 and so is in the appropriate mass resonant range. However, 142 plus 56 falls 5 or 6 nucleons short of resonance with two supergravitons. The metal boron brings along 11 nucleons and so it could 'fine-tune' the resonance of two such Nd-Fe pairs or even three where the 144 isotope predominates.

The ideal resonance is one which avoids mixed isotopes by involving groups of atoms that are all virtually single isotope elements and I note that my theoretical derivation of the supergraviton mass, as presented in Speculations in Science and Technology, vol 12, pp 179-186 (1989), evaluated it as 102.18 amu.

Can one then find a molecular form that is an integral multiple of 6.60 amu but develops, when added to the integer amu mass of an atom of a single-isotope element, into a heavy composite atomic group that has this 102.18 amu supergraviton mass?

The atom would need to have a mass number 89, 56, or 23. These elements are yttrium, iron and sodium. Iron is of mixed isotope composition. Yttrium and sodium are 100% of single-isotope form. The 13.2 amu molecular form needed to complement yttrium could comprise one hydrogen atom (99.985% isotope) plus one carbon atom (98.893% isotope), which with yttrium sum to a 102 nucleon value.

The sodium alternative requires a 79.2 amu molecular form which could not easily be analyzed, so I searched through a commercial listing of chemical compounds based on sodium. Sodium bromide came close at 102.90 amu, but there was one, and only one, compound that fitted better. It was sodium polyphosphate $[\text{NaPO}_3]_n$ recorded as 101.96 amu and it so happens that phosphorus is a 100% single isotope species and oxygen is 99.8% O_{16} .

Now, what has this to do with cold fusion and nuclear transmutation? The answer, very simply, is that **sodium is known to transmute into magnesium in living cells and the action is known to involve as a catalyst ATP and ADP, adenosine triphosphate and adenosine diphosphate, which play a major role in energy conversion in living matter!** See the mention of ATP by Gerald Lindley at p. 17 in the September 1995 issue of *NEN*.

It is apparent that 102 mass resonance seems to hold the key to this mystery activity in plant life and within

our bodies. Now, to add some spice to this account, consider the earlier reports in *Fusion Facts* (September 1993, p. 9) that a cold fusion cell using a light water/potassium carbonate solution had generated large amounts of heat with production of calcium by what seemed to be potassium-hydrogen cold fusion. Here there would presumably be some KHCO_3 molecules in that electrolyte and K^{41} plus CO_3 sums to 101 amu. Add H^1 and one obtains 102 amu. The *Fusion Facts* account mentioned Dr. Robert Bush's reference to alternative nuclear reactions involving K^{39} or K^{41} but said further study was underway to see which isotope was predominant in the transmutation. **It will, I presume, be K^{41} that is converting to Ca^{42} .**

EDITOR'S NOTE

Dr. Harold Aspden recently retired after serving many years as IBM's patent agent in Europe. He is the discoverer of the "Aspden Effect" or rotational inertia in spinning magnets (*NEN*, Jan. & Feb. 1995). His Ph.D. thesis involved demonstrations of anomalies in magnetic fields that are best explained by the presence of an energetic ether.

ADVANCED CONCEPTS REPORT

Courtesy of the Author

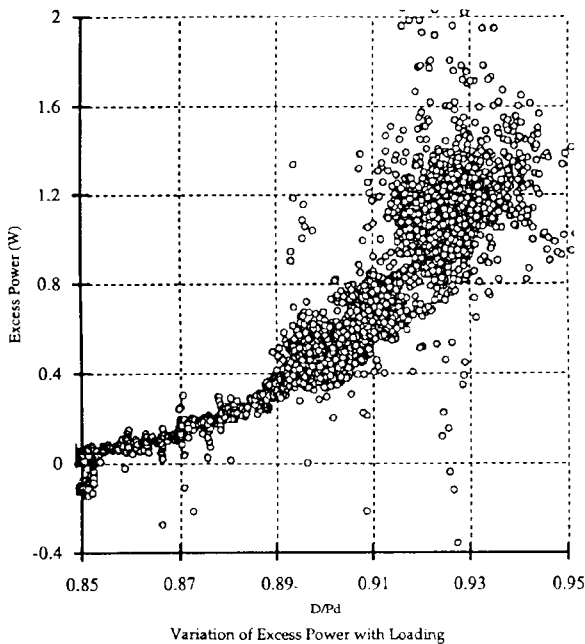
Michael C.H. McKubre, et al., "Development of Advanced Concepts for Nuclear Processes in Deuterated Metals," SRI International, Research Project Final Report, August 1994.

ABSTRACT

An experimental program sponsored by the Electric Power Research Institute (EPRI) was undertaken at SRI International to explore the central idea proposed by Fleischmann et al., that heat, and possibly nuclear products, could be created in palladium lattices under electrolytic conditions. Three types of experiments were performed to determine the factors that control the extent of deuterium (D) loading in the Pd lattice and to search for unusual calorimetric and nuclear effects.

AUTHOR'S CONCLUSIONS

The overall conclusions of the loading studies are that, by careful control of the electrode pretreatment, the electrolyte composition, and the current density, Pd can be loaded to an atomic ratio D/Pd = 1 and this loading may be sustained for periods of weeks.



Accurate, closed cell, state-of-the-art, mass flow calorimeters were designed, constructed, and calibrated. Extended calorimetric studies have confirmed the presence of a heat source that may be observed when certain criteria are met.

Rigorous attempts have been made to anticipate, exclude and define quantitative upper limits on artifacts and systematic error sources that may give the appearance of excess power. None of the artifactual sources considered can account for the excess power and heat observed. It is therefore concluded, tentatively, that the source of excess energy is an unexpected, and as yet unexplained, property of the D/Pd system. Further, the excess energy observed exceeds that of known chemical processes by two or more orders of magnitude.

Limited nuclear detection capability was included within this first project phase. Low-level detection was not attempted. These observations, nevertheless, indicate that any nuclear reaction quantitatively associated with the observed power and energy excess can only yield low-energy or stable products. Tritium, neutrons, or gamma rays are not quantitatively correlated with the excess power production observed.

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[Editor's Note: The SRI, Int'l. work on cold fusion, under Dr. McKubre's direction is no longer being funded by EPRI but is now being funded by Japan's MITI office.]

HOT FUSION CHAUVINSIM - History Note

Courtesy of Dana Rotegard

Prof J.R. Roth [well known hot fusion advocate] (Dept. Electr. & Comp. Engr., U. of Tenn.), "On D-T (deuterium-tritium) Chauvinism in Physics," from "Comments of Draft Panel Report," Lunar Helium-3 and Fusion Power, proceedings of a workshop held at NASA Lewis Res. Ctr., March 1988, NASA Conference Pub. 10018, p 221.

EXCERPTS

In the world wide fusion community, there is a widespread mindset which one can characterize as "D-T chauvinism", according to which it is considered disloyal to the national fusion program, or even a disservice to the entire subject of fusion energy, to point out any of the very real engineering or safety disadvantages of using the D-T reaction. I have personally encountered this mindset while advocating advanced fusion reactions;

- A feeling that the world fusion effort is so deeply committed to the D-T reaction that they are technically beyond the point of no return;
- That it is not useful to consider any other fusion reaction regardless of technical merits for political reasons;
- A feeling that any questioning of the D-T reaction strengthens the position of the critics of nuclear and fusion energy;
- That it is somehow politically unproductive to compare D-T to other fusion reactions, lest the existence of some disadvantages be used to the detriment of fusion energy as a whole.

I think that most of the members of this workshop are well aware of this D-T chauvinism, and this form of technical inertia will probably be the single worst obstacle to adoption of D-3He or any fusion reaction other than (hot) D-T."

[Probably including cold fusion. Ed.]

Space Energy

GRAVITATIONAL WAVE CORRESPONDENCES

Courtesy of Bill Ramsay

Nick A. Fiorenza and William A. Ramsay, "Astronomical Earth-Grid Spacetime Mapping," work in progress.

AUTHORS' ABSTRACT

The "Astronomical Earth-grid Spacetime Mapping" system that is employed here has been evolved over the last ten years. With it I have observed prominent Earthquake activity to consistently fit within one half hour of individual "nodal cross windows" and within minutes of the critical planetary and lunar harmonic orientations that occur within the windows, and act as harmonic nodal triggers. I have also observed gravitational (longitudinal long) wave patterns to also fit perfectly with this mapping system -- the material presented here. The mapping is not based upon planetary and lunar orientations alone. (Planetary alignments alone do not indicate critical times -- or Earthquakes.) The critical factor employed in this mapping system is based on the axial orientation of the Earth with respect to the galactic and solar system planes.

MEASURING GRAVITY

Courtesy of Bill Ramsay

By Alastair Couper, notes and experiments based on the work of Brown, Hodowanec, Ramsay, et al. [This paper was handed out at the Tesla Symposium, July 1995.]

AUTHOR'S ABSTRACT

In this paper, I will describe some of the techniques being used by a growing number of researchers to monitor the ever-changing character of the Earth's gravitational field. This research shows that the energetic flux which causes the effects of gravity is quite complex and subject to modulations from solar, planetary, and stellar sources. The equipment required to measure these changes is quite simple, but produces some rather rich data which is only in the earliest stages of interpretation. It is hoped that energy researchers will add some of the following [noted in paper] equipment to their measurement repertoire to

aid in the correlation of etheric shifts to changes in free energy generator output, to the patterns formed in sensitive crystallization techniques of organic chemistry, and to the predictions of traditional astrology.

For more information contact Bill Ramsay, 251 Asa Hall Road, Iva, SC 29655.

ATOMS IN WAVES

Courtesy of David Alexander

Robert Pool (Staff Writer), "Catching the Atom Wave," *Science*, Vol 268, 26 May 1995, pp 1129-1130, 2 figs, 4 refs.

EDITOR'S SUMMARY

Quantum mechanics teaches that light can be either wave or particle. Researchers at MIT have carried that concept into the realm of atoms. Using an atom interferometer and sodium atoms, they split the atom wave into two parts, one of which is then exposed to a different environment in order to learn more about the fundamental properties of matter. One of the research results is that the interference pattern (between the two beams of sodium atoms) can be changed by subjecting one beam to a varying electric field. **Perhaps as they work with unequal beam path lengths they will be able to show that light slows down in long paths as the waves interact with space energy. This last comment is not in the article -- editorial license.**

CORRECTIONS TO

EXPERIMENTS ON POTAPOV DEVICE

By Darryl Edwards of N.J.

[The following is corrected copy for the piece that we published last month (Sept. 1995) by Darryl Edwards. Some parts were edited out, and the discussion had been omitted, which Mr. Edwards considered altered the sense of the paper. We are sorry for any problem this may have caused. Ed. *Corrections in italics.*]

Response to: Test of Yuri Potapov Device by Puthoff, *NEN*, 7/95, pg 10.

...In turbulent flow it takes from about 25 to 40 pipe diameters along the length of the pipe for the flow to fully develop. *This would be about 37" to 80" for this model. Most of the pipe sections are shorter than this.* The implication of this is relevant to the Energy

Equation (the First Law for pipe flow) for control volume. The head losses, ie; the loss of mechanical energy per unit mass to thermal energy (internal energy of the fluid), will be greater than in the model calculations, which assumes fully developed flow. *The model is conservative on this point. Some upwards rounding is done to attempt to offset this. Details of the actual phenomenon would need to be experimentally determined. This is unnecessary for this analysis.*

...The analysis considers the following:

- 1) The pipe friction factor f is for smooth pipes.
- 2) The losses in the:
 - I) straight lengths of pipes:
 - a) outlet pipe of pump to contraction adapter prior to Potapov Device.
 - b) Main outlet pipe of the Potapov Device to the reservoir.
 - c) Inlet pipe from the reservoir to the pump.
 - II) the bend in the inlet pipe,
 - III) the inlet re-entrance loss, from the reservoir through the inlet pipe entrance.
 - IV) the contraction adapter, inlet to the Potapov Device.

3) The Potapov Device was initially treated as a right angle bend for a first approximation. This equates to a Loss Coefficient K of 30, Equivalent Lengths of pipe to the pipe dia. ratio, a dimensionless constant, $Le / \text{Pipe diameter} \sim 30$ (more about this later) for use with

$$\begin{aligned} \text{head losses} &= K (V^2 / 2) \\ \text{head losses} &= f (Le / D) (V^2 / w) \end{aligned}$$

RESULTS:

...
This corresponds to a temperature rise

$$\begin{aligned} H &= mc (\text{delta } T), \\ \text{delta } T &= H / c, \quad c = 4184 \text{ J / (Kg } ^\circ\text{C)} \\ &\sim 0.14^\circ \text{ C.} \end{aligned}$$

The temperature rise measured for test #2 was 4.3° C . This required about 3 MJ of energy added to the internal energy of the water. This is about 30 times this model's results. *A shortcoming of about 30 times.*

DISCUSSION

The analysis of the straight pipes, bends, and inlets is assumed okay. The first approximation of the Potapov

Device was as a right angle bend with an equivalent length $Le / D \sim 30$. The literature [1] gives typical values of Le / D for a lift check valve of ~ 600 and a foot poppet valve with strainer ~ 420 .

A second approximation of the Potapov Device required to have the model match the experimental results needs the equivalent length $Le / D \sim 900 = (30)$ original value $\times (30)$ original shortcoming factor.

... [new] P.S. *Observation: The device is vaguely reminiscent of a Hilsch-Rankine vortex tube intended for use with a high pressure gas injected tangentially and exiting axially at the near end and exiting tangentially at the far end.*

[1] Flow of Fluids through Valves, Fittings, and Pipes., Crane Co., NY, NY., technical paper #410, c1982. Adapted from Introduction to Fluid Mechanics, Fox and MacDonald, 5th Ed.

Solid-State Space-Energy Devices

GET THE VACUUM AND HELP
by Wingate A. Lambertson, Ph.D.

May 27, 1995 was a beautiful spring day in Florida. My wife, Eileen, and I were beginning to prepare to leave for the summer while I was hurrying to wrap up my experimental work and to have enough data to revise my patent application. My research laboratory is built along one wall of our connected garage and I went to it soon after breakfast to begin testing.

The experimental series was directed towards increasing the alternating current (AC) voltage across one of the four E-dams where energy is collected from the vacuum continuum to change into useful electrical energy. E-dam is a coined word taken from the words "electrical dam" and used to connote an electrical system functioning in a manner similar to a water dam. It had been found that an alternating current is necessary and that a direct current (DC) is inoperative. An AC level of 25 volts was achieved the day before.

Seven electrical meters are used to monitor the experimental model and it is important to observe all

seven meters during start-up of an experiment. Input voltage is brought up gradually until the five arc lamp load fires and starts oscillating at a high frequency. The system is stabilized at a pre-determined level and a record is made of the meter readings. A digital true RMS multimeter was connected across the E-dam under study and set on the 40-volt scale, which had been proper the day before.

As soon as the lamps fired, short black markers went across the bottom analogue part, of the voltage scale which indicated that the voltage scale used was too low. The system was shut down and the meter reset to 400 volts. On the second start-up, the meter went off scale again. The experiment was terminated, the meter set on the 700-volt scale and start-up proceeded a third time. Again, the meter went off scale meaning either that the true voltage was above 750 volts and beyond the meter capability, or the crest factor was beyond the meter capability.

After the third shut-down, it came to me that I had just demonstrated a practical method for extracting large quantities of energy from the vacuum continuum. Furthermore, I now understood the mechanism for this extraction and how to do this commercially. As I sat there on a stool in front of the bench, I said thanks as my thoughts begin to review my 22-year effort.

How does one go about explaining the tremendous source of power which I had just observed "tickling the dragon" with my E-dam? This voltage was across a small disc of ceramic 3" in diameter by 1/8" thick. I have seen estimates of the power source ranging from 10^{50} to 10^{86} Joules per cubic centimeter. Dr. Harold Puthoff, a quantum physicist in the field, used this analogy: cupping his two hands, he said, "I hold in my hands enough energy to boil all of the water in all of the oceans of the world." It is freely available to everyone, is non-polluting and is so large that it makes nuclear fission and fusion seem minuscule.

All indications are that the trend in new energy applications will be towards smaller energy producing units, rather than those which will be even larger than the 100- to 5,000-megawatt plants of today. We now know that the method is fail-safe because the E-dams have a built-in power limiting function: The E-dams will overheat, their resistance will go up rapidly resulting in a shut down of the system.

I went into the house to share my excitement with Eileen and told her that my AC voltage was greater than my meter would measure and that I had shut

down my experimental work for the season. Her response was "Good, go get the vacuum cleaner and help me close up for the summer." After thinking about it for a month, I can see that this was an excellent response. It is now time for the world to change to the use of energy from the vacuum continuum and to prepare for a promising and exciting next millennium.

[Editor's Note: We look forward to more details and **independent verification** of this dragon-tickling system.]

BRAIDED COIL TRICKLE CURRENT

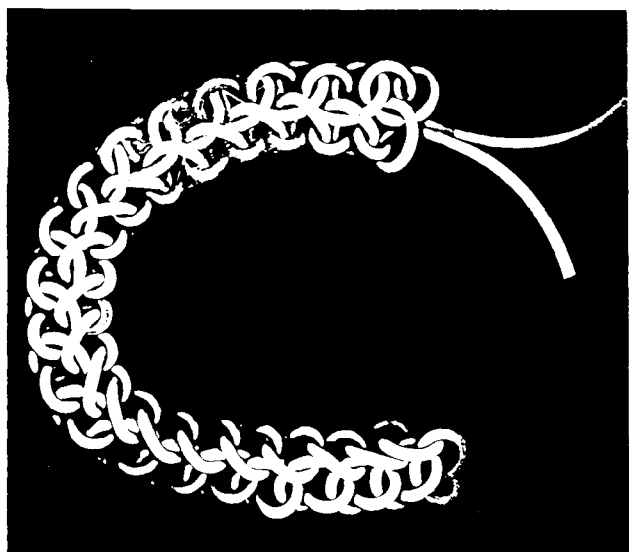
Courtesy of the author

By Samuel P. Faile and Nicholas Reiter

29 Aug. to 17 Sept. 1995

Since the Sept. 1995 *NEN* report ("More Info on Braid Coils," p 9), Mr. Reiter has obtained a voltage as high as 6.5 volts, versus the maximum of 14.05 millivolts reported previously. The main factors in the improvement involve the use of a Caduceus Braid coil configured from coaxial cable (Gemini Video WRG50C) with the **shield or sheath replacing the iron pipe** and the use of two diodes tubes rather than one.

We want others to get a jump start with duplication by use of an advanced but not complex or expensive model that produces an exotic DC electrical current. Shown below is a picture of the coil component configured out of 25 feet of coaxial cable.



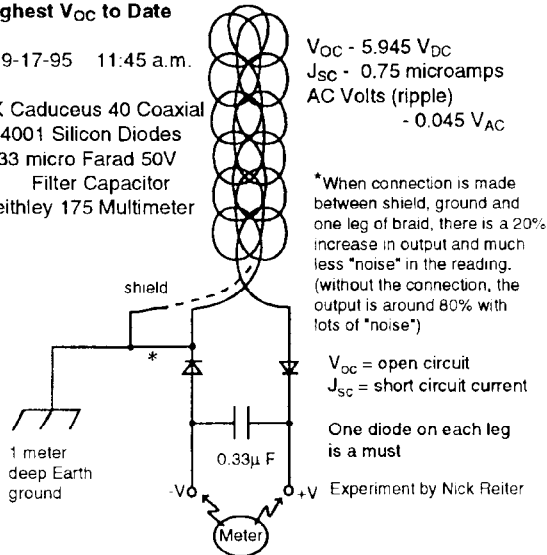
Next is shown a diagram copied from the 9-17-95 disclosure of Nick Reiter. The ground involved a 1 cm

by 2 cm cross section copper rod driven into the coil. This is connected to the shield and one leg of the coil using 22 gauge insulated wire (like bell wire / single filament).

Highest V_{OC} to Date

9-17-95 11:45 a.m.

1X Caduceus 40 Coaxial
IN4001 Silicon Diodes
0.33 micro Farad 50V
Filter Capacitor
Keithley 175 Multimeter



Coaxial Caduceus Braid 40 (Braid Link)

There will be some variation of results with time with the best output near 4:30-6:30 AM and the worst output around 4:30 - 5:30 PM. [At least at the place where Nick did the measurements. ED]

Earlier work with 1 Conductor Caduceus Braid 20 (Braid Link) coils with diodes, partially inserted into an iron pipe, suggests critical geometric factors involving fairly short wavelengths at a frequency around 40 Gigahertz. Oscilloscope readings suggest that background-like frequencies above 100 Megahertz have an effect. The coils will produce more power if the background is made noisy. A Coaxial Caduceus Braid 40 (Braid Link) a meter away from a "noisy" plasma globe with tens of Kilohertz frequencies, with its silicon diodes, increases the current to 20 microamps from under 1 microamp. It is speculated that high frequency background "noise" is being converted to some sort of exotic electrical current process.

Recent studies of the coaxial coil connected to a pair of vacuum-tube rectifiers (TV vacuum tubes B3GJ), that are effective up to the low Megahertz range, produced a current over 20 microamps. It is hoped that much higher current outputs will result from the use of rectifiers capable of operating at even higher frequency. [Can field effect transistors be used? Ed.]

Nevertheless, many questions remain which should provide opportunities as one advances beyond the duplication stage. It appears one can build a circuit with an LED that flashes each second [see 28 Sept. 1995 note]. If large amounts of power are produced will the temperature drop in the coil or somewhere else as background energy is used?

Coil geometry is important. Many variations have been tried but the three-coordinated turns of the Caduceus Braid still work the best. A slightly improved coil involves a minor modification where the coil is expanded. A non-braid structure with the 3 coordination, the so-called Caduceus Non-Braid, is also of interest. The most recent variation, combines whorls with the Caduceus Braid structure and appears to produce much higher voltages. Also, the open coil a foot away from TV screen may occasionally disrupt the operation of the video and audio with dark dashes on the screen and with a sputtering noise.

Samuel P. Faile will be glad to help those interested in the duplication of the experiments with the knotted coils and Nicholas Reiter with the electronics. Of interest scientifically is the exotic electrical current. Beyond this fact, the engineering challenge is to go from a trickle of new energy to a torrent. It is believed clues from the Henry Moray energy invention, the insights of Viktor Schonberger on vortices, and the theories of Dr. Shinichi Seike on Ultra relativity will also be of help.

17 Sept. 1995, around 4:00 pm

In a passive condition, we observe a V_{OC} of 4.752 VDC at the output of the new max. effect array set-up (1X Cad. 40 Coax.; IN4001 diodes, filter cap, grounded shield.) Our current is low, $J_{SC} = .49 \mu A$. We set up a "plasma globe" novelty device at a distance of 1 meter from the array. When turned on, the array V_{OC} jumps to 7.64 VDC (60.7 % increase). However, the J_{SC} suddenly climbs to 21.2 μA ! This is a leap of **4226%**. At the same time I was struck by a very intense nausea, which lingered an hour or so after I stopped the experiment. -N.R.

20 Sept. 1995

We replaced the silicon diodes on the 1X Cad. 40 array with a pair of 1B3GT vacuum tube rectifiers. Filaments for the rectifiers were powered from 4 AA batteries (2 for each rectifier) = 3.0 V per filament. Resulting in $V_{OC} = 5.085 V$ and $J_{SC} = 20.2 \mu A$. [Latest info: tubes are noisy and may confuse the experimenter. Ed.]

This may show that much of the energy in the array is in the VHF or higher, and that solid state diodes of conventional usage cannot pass these frequencies. Vacuum tubes can handle frequencies into the MHz. Perhaps special micro-wave diodes, say from old radar detectors, might work even better. -N.R.

28 Sept. 1995

The Coaxial Cad. Braid with 2 silicon diodes charges up a 1 MF capacitor fast enough so that discharge each second produces a bright flash from a LED. This is triggered by a button, but will soon be automatic using an oscillator. -S.F.

EDITOR'S COMMENTS

A Caduceus coil is wound so that all magnetic fields (such as result from current flow through the coil) are cancelled. Therefore, such a coil has essentially no inductance. A working hypothesis is that such a coil is sensitive to scalar waves (as contrasted with vector or "Hertzian" waves).

Dr. Faile has been experimenting with Caduceus coils, mainly of his own design, for the past three years. Depending of the coil configuration, certain psychotronic [perceptible biological] effects may be sensed that follow three basic types:

1. No sensible effect;
2. A mild to severe deleterious effect (e.g. headache, nausea, aches, feverish, etc.);
3. A mild to strong favorable effect. (e.g., brighter colors, enhanced flavors, exhilaration, etc.).

Different persons exhibit varying sensitivity to the subtle effects of these coils.

EDITOR'S SUGGESTIONS

The following experiments should be performed **with the same equipment and circuit connections:**

1. Use a single loop of shielded wire ~16" long (32" of shielded wire).
2. Twist the above loop.
3. Use a double loop of same length (like 64" shielded wire)
4. Try above loops twisted.
5. Try Faile's Caduceus loop of the same length.

Note: If you have item 5, then make loops 1 thru 4 the same length as item 5.

You may want to write to Dr. Sam Faile and ask him to send you a cord sample of his "best-performing" Cad. Braid. Then you can braid various lengths for your own experiments.

Dr. Samuel P. Faile, 4002 Sharon Pk. Ln., Apt. 13, Cincinnati, OH 45241

MRA REVISITED

Greg Hodowanec (GH Labs, Newark, NJ), "Cosmology Notes: More on the Mini-MRA."

Here are some additional speculations on the operation of the MRA (and the Mini-MRA in particular) from the Rhysmonic Cosmology viewpoint. Shown in Fig. 1 is a simplified and idealized depiction of the original Mini-MRA test. The sketch has been arranged so as to emphasize the possible **interactions** between the MRA scalar fields and the earth's scalar gravity field. These interactions are believed to be the source of the **extra power** seen with this device. For these **space energy** interactions to be most effective, it is believed that the capacitor must be of the stacked layer type, and the inductor must be of the open **flux circuit** type. To emphasize the interactions with the earth's gravity field, the sketch was arranged to show the possible orientations needed for maximum effect.

The MRA is basically a series resonant circuit which is **excited** by a low level sinewave signal generator of some sort. It is believed that the signal generator should be primarily resistive in nature for maximum performance. In essence, the MRA is a parametric or **reactance** type of power amplifier. Each **pole** or reactance is a source and sink of scalar type fields as indicated in Fig. 1. It is speculated that the returning flux fields in each reactance will "extract" some additional energy from the earth's g-field in a simple superposition of scalar fields, and thus sum their amplitudes. Using only a very small amount of energy from the local signal source (at resonance) the circuit will develop high reactive powers which will be **exchanged** between the capacitor and inductor. For example, when energy is being stored in the capacitor electric scalar field, energy will be returning to the circuit from the inductor's scalar magnetic field, and vice versa.

In contrast to standard electronic theory, Rhysmonic theory infers that the returning flux to both the capacitor and the inductor will be **augmented** at least

two to four times (and even more in some special cases) in the scalar interaction with the earth's scalar field (or possibly some other universe's scalar fields?). This means that the reactive **circulating** currents in the series resonant circuit would also be at least two to four times the real current being drawn from the local generator source. Thus, the reactive powers could be increased by the current squared, or at least four to sixteen times! This has been verified in some of my past coil experiments.

The reason for this is that, circuit-wise, the reactances of the capacitor and inductor are 180° out-of-phase and thus would **cancel out**, leaving only the residual resistance in the series circuit to determine the real current level. However, since each reactive voltage is 90° out-of-phase with the reactive current, the reactive powers are essentially non-dissipative (or lossless), assuming low loss components are used. Thus, the real powers, as a function of $EI \cos \phi$, are essentially zero, but the reactive powers, as a function of $EI \sin \phi$, are at their highest levels! The reactive powers continue to exist at resonance - they are not cancelled out - and the high reactive voltages can be measured across each reactance! The MRA makes use of the high reactive power developed across inductor, L_1 , of Figure 1 available to a real load across, L_2 , through the use of transformer action. Some of these reactions and other data are summarized following Fig. 1 for your convenience.

Some additional comments

1. At resonance, in a properly working Mini-MRA circuit, all waveforms are essentially sinusoidal and quite similar. Thus, most true RMS reading meters can be used to make relative power gain measurements, even somewhat outside of their normally calibrated ranges!

2. At slightly off-resonance conditions, some additional waveforms may be seen superimposed upon the generator induced waveforms. These were recognized by the writer as quite similar to those **seen** with his gravity **wave** detector units, which are known to be interacting with cosmic induced **modulations** on the earth's gravity field. While the gravity detectors generally have only one active pole, the presence of two active poles in the MRA can and does at times complicate these interactions. However, the effect seems to increase the parametric or reactive amplification - thus the output powers here would be best determined with rectification and thus as DC power.

3. In general, the real power developed in the resistive load across the secondary, L_2 , is a clean sinusoidal output even under off-resonance conditions.

Some final remarks

The writer feels that the MRA is real and a potential new energy source for mankind. It is free from pollution effects and uses a universal energy source which cannot be depleted!

It is also **speculated** that the 60 Hz energy source experiments using ferrites and coils (alá Sweet) are possibly "tapping" into the 50-60 Hz power grids which range over this earth. The long wavelengths of the 60 Hz transmission lines essentially generate scalar type fields which can **excite** the universe (or possibly only the earth-ionosphere complex). However, this energy is normally returned to the power grids - except for that which may be **tapped** in this manner.

It may be hard to convince academia on all this, but you *hands-on* experimenters should be able to run these types of simple experiments and determine for yourself whether this is real or not - go for it!

This will be my final remarks on the MRA. Let's hope that many more of you get involved with this device - it can be important to mankind.

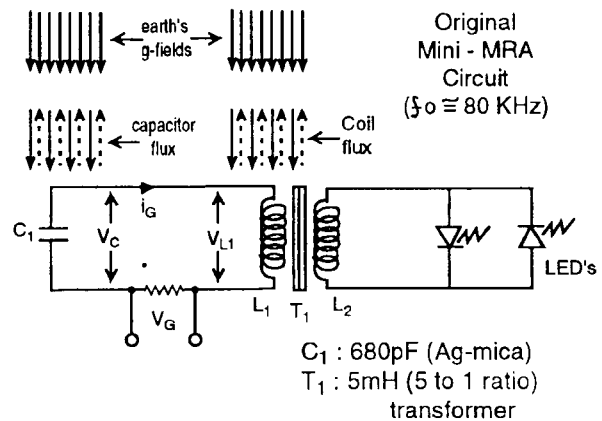


Fig. 1 Mini-MRA circuit

Test Data:

$V_g \approx 3.8 \text{ V (rms) measured}$

$i_G \approx \frac{V_G}{5K} = \frac{3.8}{5 \times 10^3} \approx .76 \text{ mA (rms) calculated}$

$V_c \approx V_{L1} \approx 9.3 \text{ V (rms) measured}$

$$Q \approx \frac{V_C}{V_G} \approx \frac{V_L}{V_G} \approx \frac{9.3}{3.8} \approx 2.45 \text{ calculated}$$

$$P_{wr} L_2 \approx 33 \text{ mW (rms) measured}$$

V: open ckt. I: short ckt.

Remarks:

$$V_{L1} \approx 9.3 \approx i_{circ} \times X_{L1} \approx i_{circ} \times 2\pi f L_1$$

$$\approx i_{circ} \times 6.28 \times 80 \times 10^3 \times 5 \times 10^{-3}$$

$$9.3 \approx i_{circ} \times 2512 \therefore i_{circ} \approx .0037 \text{ or } 3.7 \text{ mA}^*$$

$$P_{in} \approx V_G i_G \approx 3.8 \times .76 \approx 2.9 \text{ mW (rms)}$$

$$P_{wr} L_1 \approx i_{circ}^2 \times 2512$$

$$\approx .0037^2 \times 2512 \approx 34 \text{ mW (rms)}$$

$$P.G. \approx \frac{P_{wr} L_1}{P_{\epsilon}} \approx \frac{34 \text{ mW}}{2.9 \text{ mW}} \approx 11.7X$$

* Note: this is $4.87 \times i_G$!

Electric Vehicles

ELECTRIC CARS PROVEN TWICE AS EFFICIENT AS GASOLINE MODELS AT NESEA'S 1995 AMERICAN TOUR DE SOL

Electrifying Times, vol 3, no 2, Fall Edition, 1995, pg 9.

NESEA-GREENFIELD, Mass. For the first time, gasoline and electric-powered cars have been run side-by-side in real-world conditions - the electric cars ran away with the efficiency prize. The week-long series of tests found EVs twice as energy efficient as their gasoline powered counterparts.

NICKEL METAL HYDRIDE PILOT PLANT

Bruce Meland, *Electrifying Times*, vol 3, no 2, Fall Edition, 1995, pg 13.

John Adams, former employee of Delco Remy, was appointed President and CEO of a new battery company called GM-Ovonic, L.L.C., which was recently organized to produce prototype nickel metal hydride batteries (NiMH) for EVs. GM-Ovonic is a joint venture between General Motors and Ovonic Battery Company (OBC), a subsidiary of Energy Conversion Devices in Troy, MI.

Miscellaneous

REFUTING MODERN PHYSICS

Thomas E. Phipps, Jr. (Urbana, IL), "A Do-It-Yourself Refutation of Modern Physics," *Galilean Electrodynamics*, vol 6, no 5, Sept./Oct. 1994, pp 92-97, 31 refs, 2 figs. (*Galilean Electrodynamics*: P.O. Box 545, Storrs, CT 06268-0545)

AUTHOR'S ABSTRACT

Some simple experiments employing a tuning fork sensor are described that confirm the existence of Ampere longitudinal forces and the validity of Newton's third law as applied to electrodynamics. These empirical results **contradict** the "universal covariance" hypothesis and the Lorentz force law, upon which modern physical theory is built.

AUTHOR'S SUMMARY

Descriptions have been given here of experimental methods, using metal or quartz tuning forks driven both inductively and non-inductively, bridging gaps with either mercury or fine wires, that plainly reveal the existence of longitudinal electrodynamic forces parallel to current direction. These experiments are so cheap and simple that it would be an embarrassment to suggest their attempted repetition by important pooh-bahs of academic or "real" science. It will suffice that such scientists continue to assert their "reality" by acting as APS journal referees to suppress any dissemination of knowledge of what nature herself has to say on the topic of the electrodynamic force law. For readers less professionally committed -- that is, more interested in seeking the truth than in imposing it -- it is to be hoped that the present description of experimental procedures is clear enough to allow checking by approximate repetition.

Although Ampere is plainly confirmed by our observations, the big winner in this exercise is Newton. **His third law stands supreme -- vindicated once more, as by countless failures of perpetual motion and an endless continuum of other disillusioning human experiences. This time the vindication is manifestly in the realm, not of contact actions, but of electrodynamic actions-at-a-distance.** The marvel

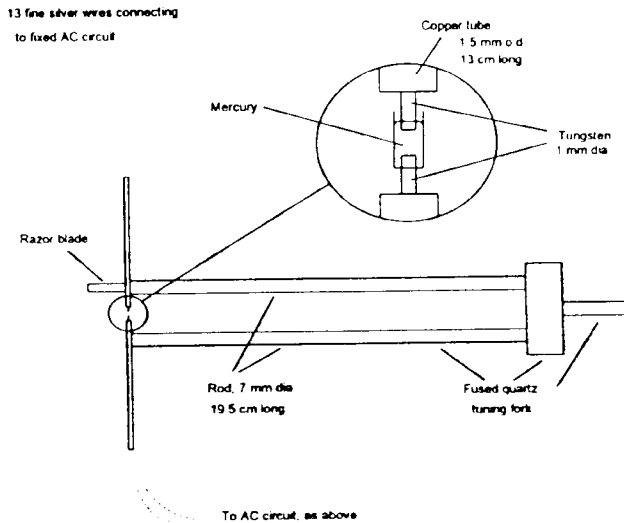


Fig. 1. Sketch of quartz tuning fork force sensor.

is how physicists of this century have had the audacity or insensitivity to set the third law quietly on the shelf, as if such insouciance were a viable scientific option, unanswerable to empiricism. The third law was the first and greatest of the *universal* "symmetry principles" known to human science. It deserved, and deserves, more respect -- even if understanding (or a model that will satisfy the stoogian intuition) continues to lie beyond our grasp.

[Editor's Note: In my judgement, action-at-a-distance will be replaced with action within an energetic vacuum field.]

UNCLE SAM, THE POLLUTER

Needed: Education of Low-Energy Nuclear Reactions

Ken Miller (Gannett News Service), "Meet Uncle Sam, the Worst Polluter," *Salt Lake Tribune*, 17 Sept. 1995, pp A-1, A-11.

EDITOR'S COMMENTS

In the year 1994, after years of studying the problem, the Department of Defense finally spent more money on cleanup than on studies. The DOD has 868 sites that are listed as on EPA's Hazardous Waste Compliance Docket. Of these 342 are Army, 265 Air Force, and 261 Navy. Some are radioactive waste sites. The DOE has 90 sites listed on the EPA's docket however, many of these sites are among the most contaminated sites in the world. Ordered to make an estimate for clean up costs, the DOE came up with \$230 billion.

Every year, the estimates for the cost of clean up are increased and the time it will take for the clean up also increases. Now the estimates extend to the year 2070 with an expenditure of over one-quarter of a trillion dollars. **We desperately need to recognize that the radioactive sites must be stabilized and not just buried.**

The traditional scientist using last generation's model of the atom will not even admit that there is any chance of stabilizing radioactive elements except by high-energy bombardment. The experimental history of cold fusion provides hints that radioactive materials can be stabilized! There are over 600 papers reporting on cold fusion experiments in which evidence of nuclear reactions have been measured.

The experimental history of cold fusion provides hints that radioactive materials can be stabilized!

Under current technical understanding, the only two ways to take care of radioactive waste is to store it or bury it for a few hundred years, while the radioactivity subsides. Now that it is well known that nuclear reactions can be produced and controlled at relatively low energies, **we must learn more about this technology and apply it to the stabilization of radioactive wastes.**

Here is a summary of what we have learned from which we can build our low-energy nuclear reaction foundation of knowledge:

1. Cathode materials have been found to exhibit isotopic changes after operating in a cold fusion reactor cell.
2. Tritium has been measured in both electrodes and in electrolytes.
3. Neutrons have been detected but not at sufficient numbers to agree with current scientific models.
4. New theory papers show that under some circumstances, one can expect that it is more probable for protons and deuterons to fuse with elements of high atomic mass compared to elements of low atomic mass.
5. Thermal power is a byproduct of nuclear reactions and is now being produced repeatedly at ten times the input electrical power in selected cold fusion reactors.

WHAT MUST BE DONE

The original Cold Fusion Committee of the Energy Research Advisory Board in the fall of 1989 advised that no research funds be spent on cold fusion. **Now that some forms of cold fusion reactors are being commercialized, it is strongly evident that the 1989 ERAB report was ill-founded and ill-advised.** No new and costly investigation into cold fusion is required. A simple witnessing of working demonstrations of cold fusion reactors is sufficient to establish the reality of low-energy nuclear reactions. **Existing levels of research funds are more than adequate for the task. What is required is reallocation of funds from non-productive research to specific investigation by those having demonstrated skills to support the discoveries in the stabilization of radioactive elements.**

Note: For further information see Proceedings of the Low-Energy Nuclear Reaction Conference, edited by Hal Fox and available from Fusion Information Center.

ROOM TEMPERATURE SUPERCONDUCTIVITY?

Courtesy of Dr. Samuel P. Faile

Staff, "NOTA BENE: $T_c = 371$ K?", *High T_c Update*, Vol 9, No. 18, Sept. 15, 1995.

See also V.D. Shabetnik, S. Yu. Butuzov, and V.I. Plaksii (Central Scientific Research Experimental Inst., Min. Def., Russian Federation, Mytishchi), "High-Temperature Superconduction Compound $YBa_2Cu_3Se_7$ with $T_c = 371$ K," *Pis'ma Zh. Tekh. Fiz.*, Vol 21, May 26, 1995, pp 67-71. See English translation in *Tech. Phys. Lett.*, Vol 21, No. 5, May 1995, pp 382-384, 4 figs, 2 refs.

EDITOR'S SUMMARY

The authors report that superconductivity has been measured at critical temperatures as high as 371 K. The authors claim that variations of this compound $YBa_2Cu_3Se_7$ has been shown to exhibit diamagnetic-paramagnetic transitions as high as 371 K which is about the boiling point of water. The *High T_c Update* reports that, although the paper was published in May of 1995, as of September 15, 1995, they have heard of no replications.

EFFICIENT SOLAR PANEL

Jonathan Haber, "A New Solar Electric Invention," *Solar Today*, May/June 1993, pp 24-25.

EDITOR'S SUMMARY

Alvin Marks is a senior citizen enjoying his 80's by working to further develop his concept of "solar cell on a plastic roll." Last year (1994) Advanced Research Development, Inc. (ARDI) of Athol, MA and DOE's Argonne National Lab entered into a cost-sharing cooperative arrangement for the further development of the **Lumeloid** (t.m. reg.) product. This light-to-electric concept is based on replication of part of the photosynthesis process. The solar panel uses molecular diodes called "diads." The **Lumeloid** process includes the diads in a stretch-oriented electrically conductive polarized film. The polarizing molecules act as antennae to convert light photons to electric power. Efficiencies as high as 72% appear possible.

The polarizing molecules act as antennae to convert light photons to electric power. Efficiencies as high as 72% appear possible.

Supported financially by EPRI (Electric Power Research Institute) ARDI had designed, fabricated, and tested a small **Lumeloid** fabricating device. Argonne National Labs has developed improved diads that are highly efficient. The combination of these two developments are expected to reduce the cost of solar electric power generation to about 50 cents per peak watt. This cost compares favorably to fossil fuel plant costs of \$1.50 per watt and nuclear energy of about \$6 per watt. Present semiconductor photovoltaic systems cost over \$4 per peak watt. [It is currently estimated that the newer cold fusion or space energy systems will be less expensive. Ed.]

For further information on this product you may contact Elizabeth Masterson, Advanced Research Development, Inc. 359R Main Street, Athol, MA 01331, Tel (508) 249-4696, Fax 2134.

SECOND LAW PARTIALLY INDEFINITE

Courtesy of author

Donald S. Ross (Bremerton, WA), "Experimental Indications that the Second Law of Thermodynamics,

as does Law of the Simple Gravity Pendulum, May Have Fringes of Indefiniteness."

Brownian motion and heat pumps very temptingly invite efforts to harness molecular energy which seems largely traceable to the sun but, being indirect, is merely diminished by nightfalls and clouds.

Such harnessing is widely deemed energy-losing or even impossible, and Artificial Intelligence pioneer Thomas Ross (*Scientific American*, April 1933, etc.) agrees with most other physicists that any embodiment of Professor Maxwell's "demon" toward that harnessing would almost surely be more operational energy-demanding than energy-delivering; not faintest criticism of that great scientist's genius, for his "demon" concept was never presented as a possible path to an energy revolution. Physicist Ross's agreement with mainstream scientists is against a background of having created and co-created supposedly impossible maze-learners which were successfully demonstrated at Yale University and the University of Washington, respectively, so "demon" creation possibilities were not casually dismissed. His entirely different "molecular check-valve" approach merits, he feels, investigation instead of encountering mental blocks caused by impracticalities of other approaches.

Toward testing that different approach, circa 1953, an ordinary-looking little "squeeze-tube" of dry graphite lock lubricant from a neighborhood hardware store was fastened upright, the stopper removed, and a steel sphere about 1.5 mm diameter was placed atop the nozzle. Almost immediately when a tiny air-admitting pinhole was punched near the tube's bottom, the little sphere began moving and re-seating several cycles per minute; my memory is uncertain concerning frequency, likely within six to 10 cpm range. Hour-after-hour consistency and ambient temperature stability seemingly ruled out the Charles's Law explanation [gas expands when heated. Ed.]. Several hours later, likely due to nozzle blockage, the tube emitted a "puff" of graphite dust that blackened a surface several inches distant, indicating significant pressure.

Apparently, as had been theorized might happen, air molecules entering the pinhole pushed their way upward more readily than they could return, somewhat as a literally "pushy" person might force passage through a dense crowd toward an open field more readily than returning toward a high brick wall, due to interacting opposition.

Had statistically astounding preciousness of that casually purchased graphite dust been suspected in time to have prevented loss, its analysis might have led to economical production in bulk, perhaps to cause cheap spinning of turbines turning electric generators, or that analysis might have led to more effective molecular check-valve approach better than the use of graphite flakes. Some unusual ratio of particle sizes, as from start or ending of a production run at the factory, may have accounted for the "Lost Chord" self-compression of air.

Unusual circumstances providing opportunity to experiment having largely ended, pursuit of possibilities went "back burner" except that for several years thereafter, until breaking of glass tubes in a move, much larger amounts of readily obtained graphite dust in much more sophisticated apparatus, consistently produced extremely weak pressure build-ups. Glass tubes four feet long of one-inch inside diameter, about 10 in number, had ends heat-flared for proper reception of rubber stoppers with short lengths of about eighth-inch glass tubes through their centers. Supported in a round wooden rack, the large glass tubes were filled with about-half-inch-separated "cells" of graphite dust about two inches deep, on filter disks prevented from sliding downward by friction of slightly broken "Os" of flat TV lead-in. Connected in closed-circuit series by short lengths of rubber tubing and slender four-foot glass tubes, the cells had a very sensitive but unfortunately not calibrated pressure-differential indicator in that closed circuit. A glass valve shunted the indicator. If memory serves correctly, very gentle air pressure was applied, prior to closing of the circuit to exclude room air, to help "accustom" the graphite flakes to upward passage of air molecules. For those several years whenever the shunting valve was opened the indicator needle would fall back to show no pressure differential. Closing the valve was followed by very slow needle movement ending in about 10 minutes with great consistency.

Only atmospheric pressures, except for the conditioning pressure, were employed. Pressures above or below atmospheric should probably be tried in closed-circuit apparatus. Gases with molecules heavier than air offers fascinating possibilities. Finely ground mica flakes instead of graphite flakes might be well-worth trying, suggests experimenter Ross to this experiments-assisting and now experiments-reporting brother. Possibly worth trying would be metallic flakes so finely ground that atmosphere without oxygen would be needed to prevent combustion.

Whether the impossibility of the practical harnessing of a molecular energy dike has actually leaked, and whether just a leak or the forerunner of an environmentally benign energy revolution, it seemingly merits investigation no less than does cold fusion.

Donald S. Ross
Bremerton, Washington
August 30, 1994

Editorial

DEVELOPING NEW NUCLEAR MODELS

By Hal Fox

There is a well-developed model of nuclear reactions based on the many years of experimental work with gas-plasmas, high-energy beams, and nuclear reactors. This model, or more precisely, these developing models, seek to explain all or most of the observations from decades of experiments. **Almost every scientist will admit that this model (or almost any scientific model) is incomplete.** It is a well-understood fact of reality that no models fully represent physical reality.

Now we have the new information on low-energy nuclear reactions reported in over 600 technical papers about successful cold fusion and related experiments. The model based on gas-plasma physics does not explain these new experimental observations. This finding should be good news because it means that we are learning more about the physical reality of this world.

The model based on gas-plasma physics does not explain these new experimental observations.

The purpose of this note is to suggest that new models of physical reality should also include the latest discoveries **and experimental evidence concerning the nature of the environment in which all fundamental particles and all nuclear reactions are embedded.** The concept of an empty vacuum is dead. The empty space was based on the negative experiments of Michelson and Morley. Michelson and

Gale later showed the early results to be in error. The concept of an empty and non-energetic space was used as an *a priori* condition in the development of Einstein's Special Theory of Relativity. The concept of an empty space was revised for the development of the General Theory of Relativity. With an increasing amount of experimental evidence, an empty, non-energetic space should be not be considered as a part of a model of modern physics.

In addition to the cold fusion literature, there are now over 500 peer-reviewed and published articles depicting various aspects of the vacuum space energy. The underlying concepts of vacuum space energy should now be used in the development of a model of nuclear reactions that explains the latest experimental observations.

The work being accomplished on high-density charge-cluster technology (see U.S. Patent No. 5,018,180) by Kenneth Shoulders and his son Steven cannot be explained in an empty vacuum. The cited patent is the first patent, as far as the author knows, that has been granted for a device which states that the excess energy appears to be from the vacuum space energy field.

LETTERS

LETTER FROM GENEVA, SWITZERLAND

I recently met a researcher who said that research bears out the fact that $\pm 70\%$ of cancer cases are caused by pollution - air, water, etc. - and most of that 70% is directly or indirectly caused by fossil fuels. As a consequence, he is involved in a group studying alternative fuels (energy). To date the focus has been almost entirely on solar energy. Of course, I mentioned cold fusion and his reaction was extremely positive. His group is not wedded to solar energy, but instead to backing an alternative to fossil fuels. The other 30% is thought to be related to genes. He said all the cancer research money is going to this 30% and very little to alternative clean energy. He is writing articles to encourage more money to solar and maybe now cold fusion research.

Ron Flores

LETTER FROM THE GERMAN ASSOCIATION OF VACUUM FIELD ENERGY

We are very grateful to have permission from you to refer to *NEN* in our brochures which appear twice per year.

In return I will supply you with the updating information which we get from Dr. Antonov, Dept. Plasma Physics, Ukraine Academy of Science, Kiev. This association helps to finance the research work there. We feel that the conversion of Vacuum Field Energy (VFE) into hydrogen or better into a form of "burnable water" is one of the best avenues to come to a practical solution. We knew that in 'normal' water only about 0.3% of the water molecules are 'willing' to polarize in, e.g., Stan Meyer's device. Dr. Antonov is among others working with a vapor as you will see from the enclosures. A long report of his is underway to here, however, only the Russian version has already arrived. I will keep you informed on the English version when it will be available here.

You are right: Field physics enters into modern internal medicine and therapy. More precisely, one cannot be a modern doctor anymore without having a basis in field physics.

The field strength in the condenser of the cell membrane is 16 V per meter, or 90-100 KV per cm! Of these membranes we have about 3000! sqm. in our body. They are, of course, in interaction with the VFE, as Townsend-Brown has shown before. This membrane system generates a magnetic field in the cell plasma and nucleus, by creating a highly magnetic cell water. The average density of the cell water is considerably over 1, in the vicinity of the membranes over 2, (Vicinal Water). This magnetic water safeguards the integrity and function of the cell. As a result no malignant 'disorder' and no other dysfunctions will ensue.

The by far, best way to optimize or to repair cell membrane defects and the then emerging under-magnetization of the cell is the application of Calcium-2-AEP (Colamine Phosphate, Vitamin M₁ (Membrane Integrity Factor)). M₁ is a nutrient or health product in the European Union and also a nutrient in the USA. I have discovered M₁ in the Spring of 1961, together with the highly reputed chemist, Dr. Köhler.

M₁ has been used as a membrane repair factor in Germany since 1963. About 25 years later it turned

out that the people taking M₁ failed to get cancer. Whereas in 10,000 life years elapse, about 45 persons show up with obvious cancer, of whom about 29 die from cancer. This figure reads somewhere between 0.5 and 2.5 for those who take Vitamin M₁.

In the meantime, we have found that the occurrence of breast cancer is highly related to a defect in the capacitance of the breast tissue. Normal is 0.18 microFarad, in the sense of a physics constant (in man!). At less than 0.12 mF, fibro-cystic breast tissue develops a cancer incidence which is 1.9 times the normal. At less than 0.09 mF, cancer is invited to develop. The intake of M₁ very markedly increases the microFarad readings, mostly to more than 0.13, and up to normal which is 0.18 mF.

We have seen the cancer suppressing effect first in about 3000 multiple sclerosis patients (since 1964). For about six years we have treated patients with high risk for recurring (or already recurring) cancer (colon, prostate, breast). The results so far observed are in agreement with the aforementioned observations: the suppression of recurring malignancy is close to total (statistically) and absolute in observation.

It is mandatory that the M₁ substance is protected in a way that it is absorbed free from any foregoing gastric or digestive destruction. Only material of which I have had a chance to control, will certainly fulfill this requirement. Vitamin M₁ also controls decalcification diseases and aging.

You are of course free to reprint, in full or abbreviated form, all of the material I send you. I want you to have M₁.

Sincerely, /s/ Dr. H.A. Nieper, President DVS

[Editor's Note: We are following this remarkable finding about M₁ and will have more to report in future issues.]

LETTER FROM ED PANGMAN

In response to the statement that super conductors have negative resistance, at least two facts should be noted.

First ordinary conductor materials ordinarily have a conductivity of about 30%, thus they all have an associated value of x ohms/ft., depending on the cross section. In super conducting materials the x ohms/ft.

factor is virtually non-existent, and the conductivity of the material is 100%, or very close to that.

In order for the resistance value to be negative in a superconductor, the conductivity percentage must be over 100% or, the charged particles in the superconductor, must be experiencing acceleration.

The fact is that electrons can be accelerated in ordinary conductors, this happens in generators all the time. Once out of the generator, however; they are subject to the resistance of the conductor only and the generative accelerating forces are not present.

Another way of turning conductors into generators which have negative resistance is to change the bias of the continuum in the conductors. Applying a voltage, allowance of gravitational orientation, or sudden inertial change, are all ways of biasing the continuum in a favored direction for movement of electrons in a conductor (super or not).

Resistance is useful!

It may be that Harold Aspden has indeed found a very nice, elegant way of biasing the continuum that is both unique and abundantly useful.

The Swiss M.L. converter also shows signs of space-time continuum biasing effects. These effects produce apparent over-unity energy generation and are not a violation of physical laws, because all they are really doing is harnessing the "etheric winds" much like a windmill.

Years ago, while doing research on electrostatics, I came upon articles and photos of electrostatic motors that ran with input from only an antenna and a ground.

The way they worked was to ionize the surface of a plastic cylinder which freely rotated around its longitudinal axis. The ionization was from corona discharge from knife-like electrodes arranged around the cylinder and pointing toward it and all were shifted off center in the same direction.

The Swiss M.L. converter does the same thing and in some cases needed no conventional electric motors to rotate the counter-rotating discs which also provided for the charge accumulation (generation).

The setup in Fig. 1 shows how the Swiss M.L. converter may actually be working. Amplified by the movement of the field of the permanent magnets,

current in the secondary is counter to the emf of the primary. The existing field of the permanent magnets is displaced by the field from the primary as it induces current flow in the secondary.

In a similar fashion, a small inverter powered by a nine volt transistor radio battery could be used to power a small transformer winding placed between two permanent magnets as they attract each other.

The result would be the same as that of the M.L. converter without the moving parts. This effect is extremely useful in that it could be made very small and a portion of the output could keep the battery charged indefinitely.

/s/ Edwin L. Pangman .

OUTPUT TO HIGH FREQUENCY RECTIFIER
AND THEN 60 HZ INVERTER
OR FOR RAW USE IN SOME CIRCUMSTANCES

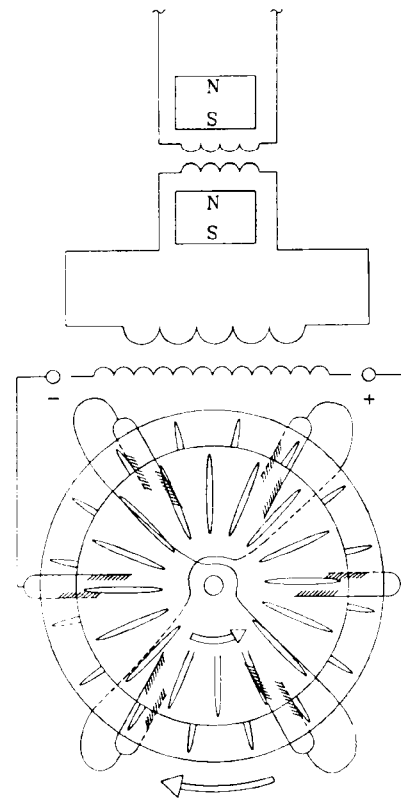


Fig. 1

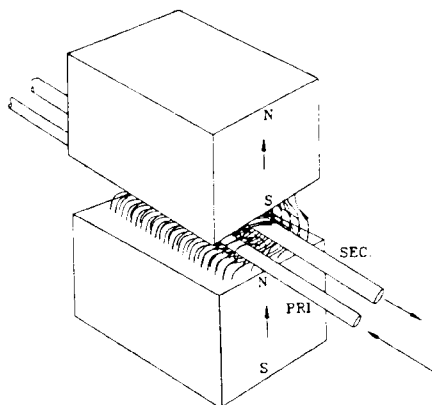


Fig. 2

[Editor's Notes: Ed is a Utah experimenter and we look forward to his reports on his continuing experiments.]

ROTEGARD WRITES WASHINGTON

To Senator Paul Wellstone:

The last time I talked to your office concerning breaking developments in the field of cold fusion, Scott Adams asked me to request in writing, a course of action to expedite the development of this new energy source. Hundreds of patents have been filed since then and major new corporate sponsors have emerged in the field both in the USA and abroad. I am writing to ask your help to do something about the continued obstruction of cold fusion commercialization by the U.S. Office of Patents & Trademarks. As you probably know, Drs. Oriani, Broadhurst, Lee, and Nelson of the University of Minnesota Materials Science Department replicated a variation of the original Fleischmann & Pons cold fusion experiment in 1990. A patent application was made by the University's attorneys Merchant, Gould, et al., which was summarily rejected 8-14-91 by patent examiner Harvey Behrend. Since then scores of worthy patent applications for variations of cold fusion have been summarily rejected by the patent office using boiler plate language. This has not obstructed this science overseas. Patents for cold fusion have been granted in Great Britain and in Japan.

The University of Minnesota, and private individuals such as Mark Hugo and myself, have continued to do experiments. Japanese scientists, Drs. Mizuno, and Masao, from the University of Hokkaido invented a cold fusion process using ceramic cathodes and filed a patent on it in Japan on 10-5-93. The results of this research were presented at the international conference in Hawaii on 12-8-93. This approach to cold fusion appears to be very promising for commercial

development. Dr. Oriani, at the University of Minnesota, replicated these results in mid-1994. In late 1994 patent filings were made by the U's attorneys for original variations on the Japanese work.

Dr. Mizuno was granted a patent by the Japanese patent office on 4-21-95. He visited the University of Minnesota on 6-21-95 for conferences with Dr. Oriani and other interested parties, myself included. Dr. Mizuno is reportedly sponsored by Mitsubishi. I recount this story to show how this critically important technology is being ceded to Japanese Zaibatus because of blind obstruction by the U.S. patent office.

The patent office is unwilling to admit that this area of technology is real and that Fleischmann and Pons (who are now heavily sponsored by Toyota) invented it. Several hundred U.S. patent filings from American and foreign inventors have been left in legal limbo because of this attitude. Foreign corporations are going to be the direct beneficiaries of this malfeasance. The prize of this line of research is a 20-50 kilowatt power source that could be used in lieu of clumsy batteries in a Toyota, Mitsubishi, or Fiat electric car. While one unusually clever Saturn TV commercial mentions this possibility, no American auto manufacturer is following the lead of their foreign competitors and, more important, no American inventor or scientist has the secure legal position *vis a vis* investors that a granted patent guarantees. [Except for Dr. James Patterson.]

I ask you to begin a congressional investigation of the patent office for its derelict attitude toward this new science. The legal confusion about who has patent position in the USA is a major problem. Many cold fusion scientists, and patent law specialists both inside and outside the government have made this point to me in conversation. The stakes are very high in this issue. Mark Twain once said that no country without a decent patent office can amount to anything. This situation has advanced to the point where I believe it can be credibly raised as a political issue.

Sincerely,

Dana Richard Rotegard

[All of *Fusion Facts* readers are encouraged to similarly contact their Senators and Representatives, especially in view of the Champaign, Illinois, demonstration! Ed.]

LETTER AND REVIEW FROM JED ROTHWELL

Attached is my review [17 pages, 12 refs.] of Hoffman's new book about cold fusion. As you see, I think it is a pretty shoddy job. He claims that cold fusion researchers use heavy water from CANDU fission reactors; he claims they never measure true rms power; and he claims that Mike McKubre never revealed any substantive details about his work. He "forgot" to mention any of the excess heat results. To make a long story short, this book has no scientific merit. It is a politically motivated hatchet job. It is a clumsy attempt to discredit good scientific work.

... I think it is a disgrace to EPRI, to the American Nuclear Society, and to Rockwell. Perhaps Hoffman honestly does not realize that the level of tritium in used fission reactor moderator water is a hundred million times greater than the levels in the heavy water sold by chemical supply houses.

INTRODUCTION FROM THE REVIEW:

Review of the book A Dialogue on Chemically Induced Nuclear Effects - a Guide for the Perplexed About Cold Fusion, by Nate Hoffman. Published by the American Nuclear Society (ANS) with support from the Electric Power Research Inst. (EPRI), 1995.

This is a strange little book. It is well written in some parts, with knowledgeable, in-depth, analysis. Yet elsewhere the author makes factual errors that might easily have been avoided. Some of his mistakes are mind-boggling, like his suggestions that chemical supply companies sell used moderator heavy water from CANDU fission reactors, or that no researcher in any cold experiment has ever measured true rms power. The focus of the book is wrong. It covers a few backwater aspects of cold fusion. It describes a handful of unimportant, botched experiments while it ignores the real work. The most important fact about cold fusion is that it produces excess heat beyond the limits of chemistry. As Fleischmann says, "heat is the principal signature of the reaction." In most experiments, heat is the easiest parameter to measure, giving the highest signal to noise ratio. Yet Hoffman does not discuss any experiments in which excess heat was observed. He censors them out, he pretends they do not exist. This eliminates most of the literature. In the second paragraph of the book Hoffman says that Pons and Fleischmann claimed excess heat, but that is the last we hear about the subject until the closing remarks. He never says that hundreds of other

scientists replicated their findings. He never mentions any particulars about heat. There is no discussion of power; net energy; energy versus mass (megajoules per mote of cathode material); power density; temperature; current density and other triggering mechanisms; or metallurgical conditions and surface treatments required to generate excess heat.

LETTER FROM MIKE WATSON

Forwarded by Don Kelly//SEA

(As you know Floyd Sweet recently died of a heart attack. Don Watson, of England, gave me a call recently and passed this news on to me. -Don Kelly)

This seems a good time to review the VTA from my perspective. It is a mixture of for and against. Firstly, the Bad news. In answer to the question why did Sparky Sweet pass information on to me in England. The answer is simple, he was involved in various hassles with investors some years ago. Due to the gagging order placed against him and the threats from previous investors hanging over him, he felt if he told people in the States how to make a VTA the investors would sue once again. He did not want the secret of the VTA to die with him so if he could get someone in Europe to repeat his results he would isolate himself from investor problems in the USA and have the VTA based on an independent foundation. For this reason he contacted John Morrison in what was then Ferranti Ltd. in Scotland, and indirectly myself..

Toby Grotz visited me and made a video of my VTA system and by chance this video sufficiently impressed Sweet that he decided to pass some information to me in the hope that one of us could replicate it here in Europe.

It is important to remember that Sweet told me countless times that he could only get the VTA to work with one group of magnets. Originally he thought he had made a universal discovery, which would work with any magnets, and his funding was based on the hope of eventually patenting a workable unit. It later transpired that only his set of magnets worked, commercial magnets will not oscillate, but, of course, investors could not appreciate this fact at all and turned nasty. A lot the misleading information he put out was really aimed at keeping these people at bay and give him time to solve the repeatability problem. (This is not new, J.W. Keely trod an almost identical path 100 years ago.)

Magnets that did oscillate did so for only a few days or weeks. I roughly tested one pair of VTA magnets in Sweet's house and judging by their high resistance they were, most likely, Barium Ferrite. They had been in a unit that had stopped working at some stage and they were not magnetized face on the face but along the long axis. The magnetization was also strongly asymmetrical, having a much stronger pole at one end than the other. Presumably the other pole was buried in the core of the magnet.

Although Sweet also thought these magnets were Barium Ferrite he never had them analyzed. The magnets originated in a junk store in LA and for this reason may have been process rejects. It is a strong possibility that they were not typical Barium Ferrite. Other magnetic ceramics have a very high resistance and some have a square loop characteristic. Normally these are not available in slabs but we do not know the origin of Sweet's. For example, they could have been used at some government establishment and later scrapped.

All this is speculation, but one thing is clear, no one including Sweet himself has ever got a commercial ferrite magnet to oscillate. He told me that if he had solved that one he would have patented the VTA years ago. Incidentally, over a period of time it became clear Sweet could not remember what he had said over the phone months previously. So by comparing previous and past statements we were able to establish a consistent story. I never saw a working VTA.

Certainly Sweet seems to have got something to work as witnessed by Walter Rosenthal and Tom Bearden and also by Ashley Grey who was involved early on. Mark Goldes who had financed Sweet at one time suspected fraud and thought that the whole thing was done with hidden coils etc. He mentioned Sweet's paranoid response on a couple of occasions which confirmed to him that Sweet had something to hide.

I have tried duplicating the hidden coil but with the power Sweet got from the VTA, it would be difficult to do it undetected. Mark Goldes said the bench was always boxed in underneath, which is true in the Bearden video, and in the Ashley Grey photos in the recent SEA magazine. Assume a hidden coil was used then the excitation frequency must be above say 15 KHz otherwise it would be readily audible with 300 watts drawn by the VTA on the bench above. If a higher frequency were used, say 25 KHz, then the problem is that everything gets live in the vicinity, thus any metal object on the bench feels live. Instruments

behave erratically and so on. It would be very difficult to fool an engineer such as Walter Rosenthal. At present I do not see how it would be possible to duplicate the effect with a hidden coil and escape detection. Of course the VTA in the Bearden video could have been duplicated with a hidden wire connected to the main. I put the hidden coil accusation to Sweet directly, he replied "Some Coil, Eh." It is true, it would be very difficult indeed to couple a hidden coil when the unit is generating 1 kW and remain undetected.

Finally when I came over last year to see Sweet he said he had a machine working in LA, only a one hour drive away, which was going to be sold to General Motors. I and Peter Bruce asked to see it, we said we would drive him over. He point blank refused without excuse or explanation! There are two possibilities, the machine did not exist, or he was frightened that we would detect some fraud. I cannot see how watching the machine in operation could have "given anything away" any more than the Bearden video did.

He always maintained to me that he had sold his invention to General Motors but would not reveal his contact man in GM. After his death Violet Sweet mentioned Chrysler not GM but again refused to give me a contact. One is forced to ask the question, "Is this all a fabrication?" Where do the lies end and the truth begin?

Having said all that, I guess I do believe he did make some important discovery early on and like Keely before him got wrapped up in his own hype to the point where reality became submerged in half truth.

All this subterfuge and half truth inevitably leads one to the view that the VTA is not what it seems. I soon found that some of the misleading information was unintentional. A perfect example was Sweet's assertion that ceramic magnets have an 8 Hz resonant frequency. I asked him to show Peter Bruce and myself how he arrived at this. He demonstrated that with a coil of wire under the magnet connected to a power oscillator and a piece of transformer iron held on to the magnet by attraction, edge on, the piece of iron vibrated at maximum amplitude at about 8 Hz. Of course we immediately substituted a hobby knife blade and the resonant frequency was different about 14 Hz and with different pieces of iron we got frequencies varied between 5 Hz and 20 Hz. We put this to him and he said that he had cut the lamination in half and the resonant frequency was the same. Peter Bruce pointed out that the mass per unit length was the same

doing it that way so the resonant frequency would be the same. The lamination needs cutting in half along its length and then the resonant frequency would change. It became clear that he had assumed that the resonance was fundamental to the magnet and had not tried other pieces of iron.

A similar thing can be said over use of the television receiver. I played with his set up myself (and also, I think Toby Grotz did a month or two earlier). Sweet claimed that if he briefly put the preconditioned magnet against the TV face it became energized. This could easily be the case but he never tried to find out what it was about the TV that did the job. He did an experiment, obtained a result, and assumed that the whole experimental set up was necessary. He never dissected the set up to find out what part was the real cause. If the TV does do anything at all it is probably due to the EHT leakage, which is significant from an old TV such as his. That in itself is an interesting possibility but it doesn't seem that Sweet pursued it, probably due to this idea he had of the TV receiving negative photons etc.

Possibly the VTA was aided by RF. Sweet frequently mentioned that you had to tune in to the resonant frequency of space which is about

$$47,725 \text{ Mhz } (1 / (2\pi \sqrt{\mu\epsilon}))$$

If he did aid the VTA with RF this could explain the closed in box beneath the bench and his unaccountable behavior in other areas. If this is the case did the VTA produce overunity overall?

Sweet originally used a rather strange radio receiver for conditioning magnets. Toby Grotz videoed it. It was shortly afterwards dismantled. This confirms Sweet's interest in RF and it does fit in with Mark Goldes suspicions.

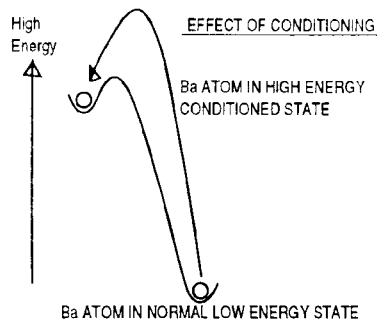
It could be that the VTA is above board, but I think it only fair to those who would have to spend time and money on this project, that they may possibly be chasing rainbows.

Since Sweet's death people are scrabbling to get his papers, thinking they contain the "secret". I don't believe there is a secret as such. Even if there was, he would not have written anything down after his previous note book was stolen. If notes exist, large corporations, government or their agents will buy them up and that will be the end of the saga.

Currently I believe that despite all indications to the contrary there is something in the VTA but at a smaller

level than the hyped up figures we have heard. Everybody is following their own agenda in this research, but here are a few of the things I gleaned from Sweet:

- 1) The conditioning impulse does not make the magnet immediately suitable for use. After application of the conditioning initial impulse combined with AC conditioning frequency, the magnet has to be in a state which Sweet called 'running'. If the magnet was not running it would not subsequently self oscillate. Running is detected by wrapping a coil of about 100 turns of wire around the magnet and looking at the output on a scope. If it is running a small sine wave will be seen at the conditioning frequency of about 0.5 mv amplitude. A good differential probe is needed to see this effect which is otherwise swamped in noise. This shows that the magnet has been programmed to the conditioning frequency.
- 2) The running state decays after a few minutes, so that the magnet has to be post conditioned with the negative energy. He maintained that a TV set was the simplest way of doing this. The running magnet was placed against the tube face for a few seconds. The TV was of course modified to receive 47,725 Mhz, and the negative energy appeared in the raster, on the tube face.
- 3) No one knows if a type 5 strontium magnet can be made to run. Sweet tried a couple of times and was unsuccessful, but it still might be possible. Sweet's choice of Barium Ferrite was fortuitous.
- 4) The VTA does not run indefinitely. The magnets need recharging periodically but they appear to deteriorate and eventual will not condition properly.
- 5) Sweet tried many different ways to excite the magnets including high voltages. The magnet was placed on top of a stack of 12 glass plates about a foot square, interleaved with metal foil, and magnets. The foils/magnets were charged with 28 KV using the EHT of a color TV. (There is no virtue in the color TV, it was just a readily available EHT source.) RF at high power, Tesla transformers, bifilar and common coils were also tried at various times. The magnet had to be excited by this process before the pulse and AC conditioning were applied. In some cases the conditioning pulse was applied at the same time as the excitation. The idea behind these methods was to unglue the bound magnetic field.



The theory is: excite the barium atoms and drive them into a high energy metastable state, rather in the way a phosphorescent body stores energy (Tom Bearden seems to have originated the barium atom excitation idea). The barium atom will easily lose this energy if disturbed excessively.

The extra potential energy appears in the magnetic field itself, and the field may be regarded as potentized or charged. This process is not known in conventional physics. It is absolutely essential that the field remains in this state for the VTA to work. Unfortunately, the energy in the barium atoms slowly decays as they one by one fall into the ground state, and at the same time the magnetic field assumes its normal form. One of the properties of this excited magnetic field is that it appears fluid or mobile. The magnetic domains are fixed in a ferrite magnet, and since the field originates from the domains, the magnetic field is also normally fixed. Charging the field makes it appear as though it were blown up like a balloon, although energetically not physically. It is the energy in the field which is readily shifted about. It is the movement of this bulge of energy across the face of the magnet that makes the VTA work. If the magnetic field loses this excess energy and falls to its ground state it becomes fixed as usual. **As far as I know physics is unaware of this effect and would probably say it is impossible.**

The curious thing is that space energy must be drawn in by this excited magnetic field. The common uncharged magnetic field does not have this effect. If more energy is taken from the coils of the VTA than is drawn from space, the energy in the magnetic field collapses to its normal value and all the Ba atoms fall to their ground state.

It is clear that the charged magnet does not have to work in a VTA, it can do so mechanically. The PM motor is possible, provided the magnets are charged first. Again provided not too much power is taken, the

magnets will ideally hold their charge indefinitely, drawing energy from space.

I must iterate the fact that this process seems extremely elusive. It seems possible to make the magnets self-conditioning or self-charging so that although the conditioning effect dies away quickly, it has had time to attract space energy. Some of that energy is recycled to recharge the magnet.

Mike Watson

Commercial Column

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

COMPANY: PRODUCT

American Cold Fusion Engineering and Supply: Information and troubleshooting for the fusion research and development industry. Sacramento, California. The president, Warren Cooley, can be reached at 916-736-0104.

CETI (Clean Energy Technologies, Inc.): Developers of the Patterson Power Cell™. Dallas, Texas. Voice (214) 458-7620, FAX (214) 458-7690.

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: Amassing and publishing energy research data from around the world, has the largest collection of cold fusion scientific papers in one place. Contact information on back page, this issue.

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.

Nova Resources Group, Inc.: Design and manufacture ETC (Electrolytic Thermal Cell); EG (commercial power cogeneration module); and IE (integrated electrolytic system).

Denver, Colorado. 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.

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

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 for later in 1995.

New Energy News monthly newsletter, edited by Hal Fox, Salt Lake City, UT 801/583-6232

Cold Fusion Times, quarterly newsletter published by Dr. Mitchell Swartz, P.O. Box 81135, Wellesley Hills MA 02181.

Infinite Energy, new bi-monthly newsletter edited by Dr. Eugene Mallove (author of *Fire from Ice*), P.O. Box 2816, Concord, NH 03302-2816. 603-228-4516.

Fusion Technology, Journal of the American Nuclear Society publishes journal articles on cold nuclear fusion. 555 N. Kensington Ave., La Grange Park, IL 60525.

21st Century Science & Technology, P.O. Box 16285, Washington, D.C., 20041. Includes cold fusion developments.

Planetary Association for Clean Energy Newsletter, quarterly, edited by Dr. Andrew Michrowski. 100 Bronson Ave, # 1001, Ottawa, Ontario K1R 6G8, Canada.

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

Space Energy Journal, edited by Jim Kettner & Don Kelly, P.O. Box 11422, Clearwater, FL 34616.

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

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

Meetings

THE NEW "NATURAL PHILOSOPHY ALLIANCE," CHALLENGING CONTEMPORARY PHYSICAL THEORY

Courtesy of John E. Chappell


CALL FOR PAPERS

Members of the Natural Philosophy Alliance, organized in mid-1995, concentrate primarily on revealing and solving various little-recognized theoretical problems in contemporary physics, astronomy, and cosmology; but also welcoming practical matters including the development of new energy sources. Many of their members' work has potential for laying theoretical groundwork for attempts to draw "free energy" from the energetic ether.

The next meeting, in connection with the American Assoc. for the Advancement of Science, will occur with the Southwestern and Rocky Mountain (SWARM) division during 2 to 6 June, 1996, in Flagstaff, Arizona. **Those who wish to be considered to contribute to special symposia--some of which will probably be panel discussions with very brief formal remarks--need to supply paper titles and any ideas for organizing such sessions by mid-October 1995.** Titles for separate individual papers may be sent as late as early December 1995. (Abstracts are not due until later, probably January 1996.) A special symposium on new energy research would be welcome.

For more information about this upcoming meeting or membership, please ask for a copy of the September newsletter by contacting Prof. Domina E. Spencer, Dept. of Math., Univ. of Connecticut U-9, Storrs, CT. 06268 (office: 203-486-3927, mainly MWF afternoons).

General inquiries may be sent to the NPA's Director, John E. Chappell, Jr., 1212 Drake Circle, San Luis Obispo, CA 93405; or to its Assistant Director, Neil E. Munch, 9400 Five Logs Way, Gaithersburg, MD 20879.



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