New Energy News
Monthly Newsletter of the Institute for New Energy

VOLUME 3, NUMBER 9 ISSN 1075-0045 FEBRUARY 1996

INFINITE ENERGY MEETING

The magazine, *Infinite Energy*, sponsored the **Cold Fusion and New Energy Symposium** at the Cambridge Marriott Hotel on Saturday, January 20, 1996. An estimated 150 persons attended this annual event, previously held at MIT. Following is a brief report of the topics covered at this one day symposium. The next issue of *Infinite Energy* will have further details.

Introduction and Overview by Gene Mallove: The meeting began with Eugene F. Mallove, editor of *Infinite Energy*, gave an introduction and overview of the growing field of cold fusion and new energy. As a part of the presentation, the following video clips were presented: Tom Passell of Electric Power Research Institute presented evidence of heavy involvement in nuclear reactions; a Clean Energy Technologies, Inc. video tape about the Patterson Power Cell™ (PPC); and Dennis Cravens' PPC presentation at the SOFE '95 conference held in Champaign, Ill. in October, 1995.

Jed Rothwell, a contributing editor to *Infinite Energy*, and a member of the Cold Fusion Research Advocates, presented a detailed report of the latest public demonstration of the PPC, as given at the December PowerGen '95 conference in Anaheim, California. In addition to reporting on the details of the PPC demonstration, Rothwell made some pertinent comments about the business sales strategy for new energy devices. Widespread sales of non-exclusive license rights is highly recommended, together with a marketing strategy that would participate in every available type of free advertising, such as through any of the many news media resources.

Mitchell R. Swartz presented his report, "Impact of Technologic Advances," particularly as accomplished by Jet Technology (a company founded by Swartz). Swartz presented some excellent information about the progress Jet Technology has been making in the development and detailed understanding of the processes involved in cold fusion. Swartz has several patents pending for important cold fusion technology. He also has several papers being peer-reviewed for publication. Mitchell Swartz must be considered one of the foremost self-funded cold fusion researchers in the world. We look forward to the review of his important publications. We expect that his papers will shed further light into the basic mechanism(s) that are responsible for the cold fusion phenomena. Jet Technology is among those companies that highly deserve the support of the venture capital community.

James Patterson, Hal Puthoff and Paul Czysz appeared and presented information via the video, "It Runs on Water." Patterson talks about his early work (pre-1989) in finding anomalous heat and his approach to the development of the PPC. Hal Puthoff predicts that new energy sources will be found.

During lunch the Canadian Broadcast Company's video of "Too Close to the Sun" was played. Of historical interest are the negative comments by Frank Close and also by John Maddox, the editor of *Nature*. The negative assurance of Close and Maddox made a strong contrast to the successful reports of new energy sources presented at this symposium.

James L. Griggs reported on his latest developments of Hydro-Dynamics' newest versions of the Hydrosonic Pump. Commercially being produced and installed to provide lower-cost hot water or steam, the latest pumps provide COP (Coefficient of Performance) of 130 to 150 percent. Griggs reported on a recent signing of a joint research effort with NASA at Huntsville which includes independent efficiency measures of the operation of the hydrosonic pump.

Hal Fox, together with Gene Mallove, made the first public presentation of the research results of the "Cincinnati Group." This group of privately-funded researchers prefer to remain anonymous for the present. **Two important discoveries have been made by the Cincinnati group: the amelioration of radioactive materials and a new method for heat production at very high temperatures.** Hal Fox relates the role that he has played for the past two years in advising and encouraging this group in their remarkable new discoveries. The Cincinnati group asked that the following information be presented: A patent application was filed on December 23, 1995 relating to a process by which natural radioactivity is greatly reduced by the use of a specially designed reactor. Demonstrations of the ability to reduce radioactivity are being arranged with a government contractor hired to cleanup one of the many U.S. government radioactive sites.

Mallove showed a video clip of the Cincinnati group's discovery of a new means of producing a high-temperature with miniature "fire ball." The video shows an input 70-watt device creating a high-temperature and melting the surface of a ceramic tile (which melts at about 4500°F). Another video clip shows the same process being used on a piece of quartz and the melting of a copper penny. The preliminary calculations indicate that excess heat of about ten times the input

electric energy is being produced. **The low-budget work of these researchers deserves the immediate attention of the financial community.**

Hal Fox also made a short presentation of the "Commercialization of Cold Fusion" in which he cites cold fusion projects (such as the Patterson Power Cell) that are being commercialized. Also presented was a brief description of the Shoulders' high-density charge clusters' ability to tap space energy (U.S. Patent 5,018,180). This technology is expected to become a major method of producing low-cost electrical energy. The third important energy development is the mechanical energy produced by the Takahashi super motor. (See also the presentation by Chris Tinsley.) Fox reported that these three technologies are being or are expected to be commercialized during 1996-97. **All three of these technologies deserve substantial funding by the investment community due to their capability to produce very large returns on investment, encouraged Hal Fox.**

Keith Johnson, an MIT professor, reported in detail on his cold fusion patent where latent heat of water is one of the heat-producing sources. Johnson also played a clip from his forthcoming "cold fusion movie," **Breaking Symmetry**. This movie captures some of the real-life drama behind the discovery and controversy of cold fusion and other scientific discoveries.

Christopher P. Tinsley, from Nottingham, UK, (and a contributing editor to *Infinite Energy*) presented information about his efforts to prove the over-unity heat-producing capability of the Potapov water-vortexing tube. He showed pictures of dozens of these devices being produced in Moldavia. All U.S. tests of this interesting device failed to show over-unity heat production. In addition, Tinsley showed a video clip of a ride on the Sciex Magnet Powered Scooter. Sciex, Ltd. is the U.K. company that plans to build the Y.T. magnets invented by Y. Takahashi. As previously reported in this newsletter, the super magnet has been used as the central element in a super motor that has a reported efficiency of over 300 percent. Tinsley showed shots of the motor installed in a moped or motor scooter.

A video film clip: "Magnetic Motor Development" made by Fuji Television in 1993 was shown to the audience.

Paul A. LaViolette made a presentation on "Loopholes in the First Law -- Cosmic Evidence?" See page 17 in this issue an article by Paul LaViolette, "Brown Dwarf Discovery Confirms Theory of Spontaneous Energy Generation." For further work of Paul LaViolette, the reader may want to read Beyond the Big Bang, Ancient Myth and the Science of Continuous Creation," a 1995 book by Paul A. LaViolette. [FIC purchased a copy of this book and will review it in a future newsletter.]

Fusion Briefings

DAMNED WITH FAINT PRAISE

Edmund Storms, "Another Biased Account of Cold Fusion," *21st Century Science & Technology*, Winter 1995-1996, p 70.

EDITOR'S SUMMARY

Dr. Edmund Storms, one of the notable scientist in the development of cold fusion, reviews the book, A Dialogue on Chemically Induced Nuclear Effects: A Guide for the Perplexed about Cold Fusion, by Dr. Nate Hoffman. Storms finds the book disappointing. Hoffman provides a good introduction by relating how cold fusion fell into disrepute and how a negative attitude developed. Storms cites EPRI's Thomas Schneider, who concludes in the foreword to Hoffman's book, that because neutrons or other expected nuclear products are not observed in cold fusion experiments, no energy production by nuclear means is possible. The logical conclusion, based on this error of judgement, is that cold fusion cannot be real.

Hoffman then goes to great lengths to try to explain away one form of nuclear ash that has been found in many cold fusion experiments, the production of tritium. If cold fusion is unreal, the tritium must be an artifact, error, or contaminant. So Hoffman comes up with strained and strange ideas of how tritium contaminated the experiments. With little justice given to the many highly-skilled and knowledgeable scientists who produced tritium, Hoffman decides that the commercial heavy water and/or the palladium has been contaminated with tritium from nuclear reactors. This explanation is way out. Hoffman ignores the many tests that have been run on heavy water before use and on many samples of palladium.

Storms states, "And in case his explanations were not sufficient to convince his readers, Hoffman then applies his imagination with even greater abandon. He assumes that commercial palladium has been contaminated with tritium by being mixed with metal used during the atomic weapons program. Such mixing has been looked for hundreds of times without any evidence being found. However, to be on the safe side, cold fusion researchers use only **virgin** palladium, and most test for tritium before its use."

Storms reports that some good can be found within the nonsense provided by Hoffman. However, it would take a skilled reader to separate fact from supposition. Storms concludes that this book **is not a guide for the perplexed about cold fusion.**

[We at *Fusion Facts* find it most interesting to see how supposedly skilled and brilliant scientists can chose to ignore the enormous

amount of cold fusion literature with many replications of discovery. Why there are those who still "strain at a gnat and swallow a camel" is a puzzle. It is certainly not the mark of a scientist to continue to refute facts and lobby against truth. - Ed.]

ULTRASONIC IRRADIATION

Jacob Jorné (Univ. Rochester, Dept. Chem. Engr.), "Ultrasonic Irradiation of Deuterium-loaded Palladium Particles Suspended in Heavy Water," *Fusion Technology*, vol 29, no 1, January 1996, pp 83-90, 7 figs, 18 refs, 1 table.

AUTHOR'S ABSTRACT

Ultrasonic irradiation of a slurry of deuterium-loaded palladium powder (1 μm) suspended in heavy water causes cavitation and high-speed collisions between the palladium particles. High local temperatures, estimated at above the melting point of palladium (1828 K), cause melting and interparticle fusion. The expectation that such collisions can induce high stresses within the palladium particles and lead to favorable conditions for nuclear cold fusion of the deuterium atoms within the palladium lattice is checked by measuring the neutron rates during ultrasonic irradiation. Several bursts of neutron count are observed and can be accounted for as background anomalism, although the highest observed neutron rate is about four times the background and cannot be explained as background. The X-ray photoelectron spectroscopy analysis of the deuterium-loaded palladium powders reveals that after ultrasonic irradiation in heavy water, the palladium powder becomes partially oxidized and undergoes some compositional changes.

Solid-State Space-Energy Devices

MRA AND MEASURING METHODS

R. Nectroux
November 7, 1995

An issue of *Extraordinary Science*, and the April, May, and June 1995 issues of *New Energy News* gave a large place to so-called MRA or Magnetic Resonance Amplifier. The subject has a big interest for the technical part and for the authors dealing with MRA.

I've been working for 15 years in a physics and electronics lab near Paris. I worked piezoelectric and magnetostrictive properties of materials with calculations about tuned circuits and transformers. I also observed distorted signals with spectrum analyses and measured piezo and magnetic resonances.

Several times, I had to face dreamful concepts, finally unfounded. Truly, I'm always sorry to break dreams of good willing people thinking to have found a big discovery useful for mankind. Nikola Tesla was electrical engineer and might test his advanced dreams but many people can't do at this level.

MRA (in *NEN*, May 1995) is supported by 3 interesting authors. Nevertheless, the technical part must be separated of a lot of esoteric ideas . I noticed the real measurements need to be more carefully conducted.

1 - **Sacred Geometry and Science**.
(Refering to Norman Wootan article)
Geometry of crystals is now accepted by official science. Chemistry works now with 3D shape molecules. Nature works with hyperbolic spiral from Fibonacci series and golden number. I discovered another one, much more potential and attractive: radiant number Ψ (psi) by Gerard Cordonnier. I have a short paper about that.

I painted about 100 geometrical figures (for esthetic and symbolic) and have written computer programs for printer and HP plotter (size A3 & A4). I've built polyhedrons with cardboard, metal wires and metal rings.

As for free energy devices and over unity results, there are many measuring problems. Free energy devices don't change all properties of all components, even resonances. There, obvious mistakes appeared, hiding to state about real effects.

2 - **Original MRA** (Refering to Joel McClain article)
Association of 2 resonators (acoustic and electric) is new and worth testing. Resonances modes are many for capacitor and magnetic core (ultrasonic range) with line propagation effects. Interferences appear between the resonators frequencies and working frequency. Instabilities and non coherent spectrum may occur especially with saturation which gives RF by resonances of transfer coils.

Ceramic capacitor, although with barium titanite are not same quality and are not obviously polarized. Resonant properties depends on polarizing conditions: voltage and temperature. Each series resonance is coupled with parallel resonance. Usually there are many resonances in 3 dimensions, more than with a quartz. In addition, capacitor and ferrite may be acoustically coupled. Many parameters have to be tested.

Resultant signal form is not sine wave and power measurements may not be correct with RMS values. Luckily, no DC voltage on coils! Only RF wattmeter (well used) allows to have right values (true RMS not true power). Power out is DC, and with pure resistive load, that would be valid.

Over unity may be sure, only if power in and out are known with enough accuracy. Other proof of over unity in case of 5/1 (claimed power gain?) may be feed back operation.

3 - **Mini MRA** (Refering to measurements and circuits by Greg Hodowanec)
One Joel MacClain article gives neither figures nor results about original MRA, but offers a large place to mini MRA from Greg Hodowanec, with different principle. JMC gives a device with frequency nonlinearity (piezocapa) and DC output, although G.H. gives a Q autoadaptable network by diode LED (parallel output). I must remind it's one of several G.H. networks always with incoherent data and obscure technical explanations, bad meters (out of range), bad measuring methods, and all that wrapped in a abundant free energy language.

Seeing all his electrical diagrams and data, I wired several networks and now can explain behavior of circuits and their components. Good opportunity of finding again theory and practice of circuits. Oscilloscope tests are absolutely necessary.

-Signals are distorted (current and voltage), not sine wave as G.H. says. -RMS values have very restrictive use especially for power calculations.

RMS (root mean square) is DC value which gives the same power as the signal (with Resistor load only). With reactive and non linear loads RMS is nonsense! Besides, in case of DC average value, meters as Fluke 87 suppress DC with a capacitance, then current in diode is wrong (non linear and DC average value).

-RMS watts don't exist. Only allowed: apparent power in volt.ampere (sine wave and linear loads): not real power (excepted if load is pure resistance)

Fluke 87 at 75 kHz is out of range (above 20 kHz RMS true value not valid). If voltage and current are wrong then product as power is wrong. We must also consider power factor in sine wave and the shape factor (difficult calculation). We can get real power in a non-linear or/and reactive load with RF wattmeter (if carefully connected it gives mean value of instantaneous power). We can also use method of Hal Putthoff which needs only numerical scope and has good accuracy.

Perfect diode only a switch (P=0): reverse Ir=0; forward Vf=0; P=0.Vr+0. If=0, LEDs (Vf=1.8V), may be used as a voltage clipper DC or AC mono or bipolar.

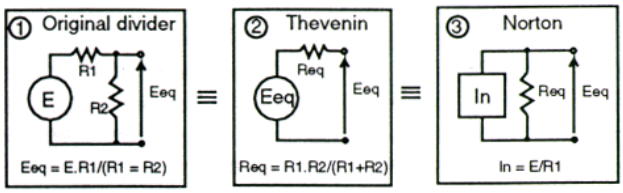
Diode Vf=0.6V or LED(1.8V) parallel on coil makes DC average current and harmonics. Average current may also cause core saturation, then with tuned coil, harmonics are observed at the input where voltage depending on generator internal resistance which is a very important parameter never considered in any diagram of Mini MRA.

The true input of the circuit is before the capacitor and depends on the drive control position. Resultant R drive would give 1K always series with CI if figures are true, but distortion gives 150 and 225 kHz, since it's inaccurate.

Serious researchers need better explanations, diagrams, and measurings. I'll try to summarize with some drawings the important points to make things clearer and eliminate all this confusion.

First, a coil L has inductance, it means property of inertia for current, since when supplied with step voltage, slope current results; when supplied with AC voltage it results 1/4 period delay for current. (V to I phase -90°)

Next, a capacitor C has capacitance, property of inertia for voltage, since when supplied with step current, slope voltage results; when supplied with AC current it results 1/4 period delay for voltage. (V to I phase -90°)



[Other explainatory circuit drawings were sent and are available to researchers who request them.]

So, if series connected coil and capacitor, have same current IL=Ic, but at resonance VL=-Vc , since 90°-(-90°)=180° and energy is oscillating between L and C. VL=LwI; Vc=I/Cw; with w=2πf; f_2=1/40LC; L(Henry), C(Farad), f(Hz)

No real power in L and in C, that's only a small energy quickly oscillating and no real useful power. We see on scope diagrams that V and I are phased 90°, since instantaneous power v.i is sine wave with double frequency, mean value 0. L and C are not pure reactive impedances and L have wire resistance and magnetic losses in the core, C has dielectric losses, then I is limited by R series. If L and C cooled and supraconductive (no power in) endless oscillation, but no power out, else amplitude decreases quickly, because of the small energy inside.

Power may be extracted by transformer. L becomes LI with L2 for load. Transformer carries back properties of load impedance (included reactive and non linearity, excepted DC mean value). Nevertheless, non linear loads as diode, LED, zener, transistors make harmonics and if DC mean value in L2 reaches saturation level: harmonics increases, Q decreases. Besides, resonance frequency raises since L2 is shorted for a variable part of period (<50%). It's an adaptable Q circuit, since Q is high at low level, but at high input level Q is low: limiting effects regulate output level. It is used in RF circuits and for industrial machines.

For getting DC output, the better is a bridge with Schottky diodes because fast recovery time and low voltage drop.

Driving mode of tuned circuit may be explained now as much as internal impedance of signal source especially with a resistive divider: R2/(Rl+R2)

Thevenin has shown it is equivalent to new simpler voltage source with new features. Req=Rg+(Rl.R2)/(Rl+R2)and Eeq=E.R2/(RI+R2).

Norton has shown it's also equivalent to current source with In=E/R1. So, all calculations become clear and we see the drive mode: current or voltage. Voltage drive if Req<<RO; Current drive if Req>>RO; (resistance at resonance)

With sine wave and linear load Q=VL/Eeq for voltage or current source. Drive signal are always distorted, then voltage drive is better, since VL is high, while with current drive Eeq is minimum for fundamental, harmonics not attenuated.

Resonance is maximum VL in voltage mode and minimum Eeq in current mode. Transformer carries back parallel load on primary LI with ZI=Z2/m_2; m=n2/n1=1/5. Then results dampening and detuning of L1 (f resonance increases) Besides, coupling L1:L2 <100% not considered although easy to measure with VL2/VLI<m So, we can see for G.H. diagram we have ambiguous drive with a big distortion rate especially with nonlinear load. Voltage and current on LEDs are very distorted!

All free energy words and files on any computerized nets cannot change that! Increasing papers and files with inadequate methods and measuring devices leads to increase number of ingenuous mystified people, seduced by wonderful things.

LEDs have average current but no average voltage on coil. Because limiting effect of forward voltage drop, signal form is nearly constant and increasing distortion is rejected at input by C_1 since Req is not low. You may notice:

-LC series circuit with high Q driven in current can be used as a distortiometer.
-The same circuit loaded with diodes is harmonics generator without fundamental.
-With 2 opposite parallel diodes only impair harmonics.
-Harmonics creation allows frequency mixing but isn't power creation nor pumping.
-Other conditions necessary to resonate space and matter for mixing.

Conclusion

In many conditions, LC series circuit is able to have special properties which seem wonderful to people not enough skilled in measurements. It can be used as amplifier for voltage and current. Yields always less 100%. Apparent energy may be increased, but it's a reactive impedance transformer or adaptor which can be solved with Smith diagram used in RF impedance matching used for lines and antennas.

Adding of diodes and non linear components (like magnet or saturated ferrite) brings harmonics, and decreases circuit quality: energy is changed in harmonics, thus no over voltage, although sharp peaks possible.

With RMA, measurings systems not convenient to obtain right data (out of range and erroneous process for calculations). Urgent need to study metrology course! Now, I heard several skilled experimenters with consequent systems obtain about 50% and I'm confirmed in my still reduced but already obvious tests and remarks.

Free energy, clean energy and space nature are serious subjects. However, the small knowledge of many good, willing researchers and their incorrect opinions brings confusion. In spite of all that, it's better to publish first and correct later. Research between mistakes allows often useful discoveries. Let's hope so!

REMARKS ABOUT G.H. Mini MRA Demo Circuit FE-6B

(*Extraordinary Science* Vol. VII Issue 3 p.12, p.13, and *NEN* May 1995, p.9)
First for the 3 tests shown, many anomalies:
-Position of drive Pot unknown, the same for internal resistance of generator
-The same symbol is used for input and output current?
-RMS watts don't exist!
-Power factor and shape factor for input: always ignored ?
-Place of voltage and current not specified (Vg and Iout)?
-Fluke 87 out of range at said 75 kHz (maximum rating 20 kHz)!
-Resonance with 5mH and 680 pF is obtained at 86 kHz (not 75 kHz)?
-Power of LED is not $V_{RMS}.I^{RMS}$; Besides V^{RMS} and I^{RMS} erroneously measured.
-Real power of LED is P=Vf. Iav with Vf=I.gV and I average (DC) never measured?
-Never sine wave at input! Distortion rate: never verified!
-Not measured: Q of unloaded circuit? Transfer effective ratio and coupling?

Test 1:

Input: I false: reactive circuit for harmonics (RMS out!).
Output: I false: non linear and mean value (DC) eliminated in Fluke 87 (capa)

Test 2:

Input: I false: reactive circuit for harmonics (RMS out!).
Output: I false: non linear and mean value (DC) eliminated in Fluke 87 (capa). Regulation effect of LED appears for amplitude of voltage out.

Test 3:

Input: Voltage decreases after test 2, shows Ig has increased because the voltage drop increases in internal output resistance generator. From G.H. data, I1 would have decreased, but without testing primary voltage and never scope control, that's not credible

because hypothetic energy pumping doesn't change parameter value of all components, while saturation level still ignored.

Considering the usual confusions of G.H. measurings and explanations, to seek the mistakes is not to be malicious, but logic and prudent. Sorry!

Place of Vg not specified. It should be Pot rail called Drive. Perhaps, G.H. has taken TPI, then Vg nearly constant for Rg (internal of generator) is weak. Vg specified 2.5Vrms means 7V peak to peak maximum possible with 9v battery. However, drive of C1 has internal resistance function of Pot. position. Resistance of TP2 meter not considered and wave form never verified. What about QO (without load)? What about parallel resonance of primary? If current decreases, the cause may be parallel resonance of L1 not hidden by LED. So, L1 has a parallel resonance due to distributed capacitance CO of the coils and the 2 resonances combine in the impedance curve, but no energy creation excepted for people using not convenient method and measuring systems.

Above parallel resonance, a coil has line properties with many resonances parallel and series and may become a choke coil. Tesla invented several typical coils using geometrical line effects. Testing is difficult operation reserved for wobbulator or network analyses. The claimed decrease of ig not coherent with decrease of input Vg=2.5V in place of 2.88V in Test 2. Test 3 is the basic circuit and should be Test 1 classical case, but not verified with scope monitoring!

Really ig increase in Test 3 for LED clipping (limitation) is removed and Q raises, thus more ig input current, less Vg input, more Vout and more I output.

Beware of automatic scale switching in Fluke meters. Band pass might be different especially when running frequency (75 kHz) is already 3.5 times above limit permitted (20 kHz). Excessive jokes not a good game!

Given data too exact for real measurings: rather calculated, since $m=l/5\ R2/m_2=700.5_2=17500$ and $Vdrive/I1=2.5/.14=17800$. Therefore, between L1 and L2 coupling factor <100%. Then, results "off the shelf," neither serious nor credible. Space and gravitation not useful to explain that!

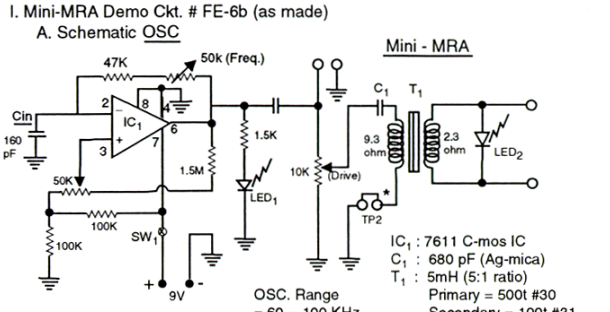
Before wanting to pump space energy, a good knowledge of measurements and components is absolutely necessary. Besides, good experimenters publish only sure results tested with many convenient methods and many conditions. Measuring devices must be tested before operation with known signals for verifying.

With Mini MRA, we have always the same transfer in various networks, but always so many mistakes in measuring and calculations. Really, it's a simple tranformer series tuned at primary coil. LEDs and diodes make non linearity and harmonics as much as saturation, a good opportunity for interesting and difficult study.

Quick experiments, boiling experimenters with inaccurate devices, and not convenient methods cannot help usefully. Dreams do not drive necessarily to genius and intuition, they may also drive to nightmare. Let's hope a better conclusion...

I. Mini-MRA Demo Ckt. # FE-6b (as made)

A. Schematic OSC



B. Remarks:

1. LED_1 serves as pilot light and also as an indicator that oscillator is developing power out.
2. Shorting pin * in the TP2 is normally kept in and removed only for line current measurements.
3. Output load LED_2 is normally kept in, but one leg can be opened for strictly resistive loads.

INVITED RESPONSE

By Gregory Hodowanec
12/12/95

I received the copies of the material sent to you by Raymond Nectoux and was surprised at the extent and nature of the material. While I do not wish to engage in any extended 'debate' on the reality of the MRA, I will respond to Mr. Nectoux's impression that I may be but a 'novice' in this area. Far from it. I am now retired about 10 years. This makes me one of that generation which grew up with the privations of the Great Depression as well as the sacrifices of World War II. I had served in the military for 3 l/2 years in several capacities, including combat duty. Perhaps, that background had instilled in me a bit of humility as well as respect and compassion for mankind. It may also be a reason why I chose to release some thoughts and speculations on esoteric subjects into the Public Domain, mainly through some papers

and especially Notes to some select colleagues who are quite aware of my thoughts in Cosmology and Gravitation.

Possibly a brief review of my technical (professional) background might be in order here. Upon discharge from military service I obtained a BS Degree in Physics, majoring in nuclear Physics and carrying minors in supporting math and electronics. While nuclear energy was an 'in' thing at that time, I had misgivings even then of that area and opted to enter the field of electronics instead. Fortunately, I was able to obtain a position with a small research laboratory engaged in developing special-purpose electron tubes, also an 'in' thing at that time. The lab was directed by a very open-minded physicist who allowed much free expression in the various research programs there. Projects were handled by individual researchers from concept and design to prototype development and limited production runs. This was very valuable experience, as the projects ranged from subminiature microwave triodes, high-gain secondary-emission-type tubes, to indicator tubes, and then all the way up to large cathode ray display and storage-type tubes, including both conventional designs as well as some quite unconventional designs which proved to be very effective and which advanced the state-of-the-art.

I was also able to help advance the state-of-the-art in very low-noise traveling-wave tubes (TWT) and was instrumental in the design of the first available lownoise TWT's which were permanent magnet focused (as well as some other specialized TWT designs).

At the solid state division I became involved with the state-of-the-art RF transistor design and applications. Many 'firsts' and breakthroughs were also achieved here, sometimes under very difficult circumstances as the more 'conventional' designers preferred to stay with their 'book learning' and were afraid to explore newer ideas and techniques.

After a brief period of unemployment, I re-entered the profession as a systems design engineer. Here, my conventional design experience (as well as more open-minded design approaches) also proved valuable in the design and development of systems for the FAA. I remained in system design work until retirement.

With respect to the Mini-MRA speculations, a brief review of the original design is in order. After seeing McClain and Wootan's original report given on the KeelyNet (and reported in *NEN*), I immediately sensed that perhaps it may have been operating as I had speculated many times in the past (as reported in many articles and S-Notes). My first impression was to take a 'quick' look with what I had available, specifically some small pulse transformers. As is often the case, my choice in using this small transformer was perhaps serendipitous (pure chance) as it turned out. Lacking the proper equipment (and funds and time), I made some brief tests which appeared to confirm McClain and Wootan's observations. I sent those researchers some transformers and capacitors (as well as the test unit) and they reported that they had confirmed my data. My next approach was to drive the Mini-MRA with a highly efficient oscillator source of my own design with the intent of having possibly a 'stand alone' demo unit. A small demo unit was made (Ckt. #FE-6A), but it was not self-sustaining. I offered this unit to McClain and Wootan as a possible portable demo unit. Those researchers verified my data, but in order to have it also verified by independent laboratories, McClain wisely removed some of the variable control I had designed-in in order to limit the evaluation to relatively fixed conditions at above resonance (where power was lower but gain was higher). Thus evaluations could be made under so-called 'black box' conditions where input and output RMS Powers could be properly determined. The circuitry was basically resistive in nature, the only reactive elements being the series capacitor and the transformer. No LED device was used.

The modified Ckt.#FE-6A was the unit evaluated by the three professional laboratories in Atlanta. Each laboratory, after extensive testing, reported to McClain and Wootan that power gains in the order of 10 to 18 times were seen, using the best known equipment and techniques. Since these were independent labs 'looking' at the same unit, it was reasonable to assume that since all the data as reported by myself, McClain, Wootan, and the labs were in the same 'ball park,' then that data must be real. I am now back in possession of Ckt. #FE-6A and will retain it (as is) for future reference.

Since there was much interest in the MRA device, I made some attempts to evaluate some other transformers which were available off the shelf. Most of these tests were quite similar to the original Mini-MRA test. Thus, there may be some other factors which need further investigation. My speculations and tests were aimed mainly at some of my colleagues only -- but publication in *NEN* obviously reached a much greater group of researchers. In any event, my objective was to get additional independent verification as to the reality of the MRA device.

Mr. Nectoux refers to much which is a matter of semantics and usage. For example, he objects to the use of the term 'essentially sinusoidal.' While pure harmonic motion and resonances are indicated by sinusoids, the above term is used here to indicate that while it may not be 'pure' sinusoids, it is far from being a sawtooth-, triangular-, or square waveform. Also, the use of the term RMS is valid when essentially sinusoidal waveforms are used with resistive sources or loads. With respect to the use of watts with real and reactive powers, perhaps it would have been better to differentiate the reactive powers as vars, but that would not have changed the numerical values determined. Remember, these Notes were aimed at colleagues who understood these 'loose' use terminologies. Finally, as a microwave transistor circuit designer and a system designer, I am well aware of series and parallel circuit equivalents (ala Thevenin and Norton) and have used such techniques extensively.

I have the utmost respect for the independent researcher such a McClain and Wootan, as well as the many others, too numerous to mention here. I will close this response with some paraphrased

remarks which are attributed to fine independent researchers who have developed the famous Swiss M-L Convertor FE unit:

(l)"the energy can't be drawn from electrostatic disc generators -- NEVER! That would make them stop. The disks merely give the fields which alternate."
(2) "We focus attention on barely known and unknown energies."
(3) "What society throws away, we collect (knowledge?)"
(4) "We discovered a few forces and truths; we're using simple means."
(5) "We are drawing electricity (energy?) from the air (aether?)."

I believe these simple remarks reflect what I and many other independent researchers have been trying to say all along. The Swiss M-L Group has apparently succeeded in their objectives. We should again learn from them that major scientific advances do not require the mega-bucks of present day science; all that is required is an open-minded attitude!

Electric Vehicles

BATTERY COMPARISON

Albert Himy (Westinghouse Corp.), "Overview of Various Types of Batteries for Electric Vehicle and Solar Applications," *Electrifying Times*, vol 3, no 2, Fall '95, p 47.

SUMMARY

A comparison of various battery systems, both commercially available and currently under development. Such characteristics of the types are mentioned: Lead/acid -- available, low-cost, low power density. Nickel systems -- include Ni-Fe, Ni-Cd, Ni-H, Ni-Metal Hydride (MH), Ni-Zn. The Ni-H are discounted because of high cost, the Ni-Fe because of relatively high maintenance. Air systems -- only Zn-Air are considered but have the disadvantage of needing the electrodes replaced at recharge. Lithium systems -- still very experimental, in research stage. Safety aspects have slowed their development.

EV BATTERY COMPARISON

	Ld-Acid	Ni/Cd	Ni/MH (Ovonic)	Ni/Zn	Zn-Air	Lithium
Energy Density (Wh/kg)	25-40	50	60-80	70	200	110
Power Density (W/kg)	13-200	190	200	300	100	-100
Cycles	5-800	2000	1000	300	200	200
Life (years)	4-5	10	5+	3	2	2
Rechange (hrs)	8	3	1	8	-	-
Cost ($/kWh)	50-250	1000	2000	?	-	-

MIT SAYS NO ELECTRIC CARS?

Richard de Neufville (chairman, Technol. & Policy Prog.), Stephen R. Connors (Energy Lab Elec. Utility Prog.), Frank R. Field III (Matl. Sys. Lab), David Marks (Enviro. Engr. Edu. & Res. Prog.), Donald R. Sadoway (Dept. of Matl. Sci & Engr.), & Richard D. Tabors (Lab for Electron. & Electromag. Sys.) [all at MIT], "The Electric Car Unplugged," MIT's *Technology Review*, Jan 1996, pp 30-36.

EDITOR'S SUMMARY

The following three statements are highlighted as insets to the article: 1) "Looking under the hood, a team of experts says the electric vehicles being developed today are inadequate and expensive and won't even notably improve air quality. So why are California and other states mandating that they be sold by 1998?" 2) "Generating the electricity needed to run electric vehicles will worsen air quality in regions downwind of fossil fuel-burning power plants." 3) "Cost-effective batteries that can provide the desired range for electric vehicles may simply not be available in our generation."

> *"If an expert tells you that something can't be done, he is probably wrong."*

A famous person, whose name I've forgotten, said, "If an expert tells you that something can be done, you should probably believe him. If an expert tells you that something **cannot be done**, then he is probably wrong." This team of authors "...assessed the total environmental and economic effects of the manufacture and use of electric vehicles made with different materials and powered by many types of batteries." In their judgement, "...the electric vehicle policy defined by the California Air Resources Board is neither cost-effective nor practical. ... the technology of electric vehicles is still far from meeting the needs of a mass consumer market and it is unclear when, if ever, it will do so." **This article is a wonderful example of the whale oil syndrome**: "What can we possibly find to replace the whale oil?," was the cry when whales began to become less plentiful.

These highly competent professors have some excellent points to make. Where they have demonstrated their shortcomings is in technological forecasting. Some examples follow. Example 1. The article discusses the problem of heating the car in winter in Massachusetts and New York where it may require as much energy to heat the car as to propel it. The **Patterson Power Cell™** has demonstrated the ability to provide 16 times as much thermal power as is used as input electrical power. Of course, it will require development and testing. **But that technology is ready to be commercialized.**

Example 2. Batteries have a problem. "Experience (such as with laptops) shows that claimed battery performance is about twice the actual performance." Lead-acid batteries have an energy density of about 35 watt-hours per kilogram while gasoline has about 12,000

watt-hours per kilogram. The recent development of super capacitors have led to the technological forecast of the development of improved capacitors of a similar type that will have an estimated ten times the energy storage of a lead-acid battery. **The business plan for this development would require about $2.5 million and 12 to 18 months for moderate-scale production.**

Example 3. "...electric vehicles do not eliminate emissions--they simple move them elsewhere." "...The fuel [burned in a power plant] loses up to 65 percent of its energy when it is burned to produce electricity; 5 to 10 percent of what is left is lost in transmitting and distributing the electricity before it even gets to the electric car." The authors make no comparison with the degree of pollution control mandated for power plants as compared to the pollution allowed by the diesel-burning cars and trucks. In addition, no mention is made of the possible use of new energy systems to charge the batteries on-board. For example, this publication has many times advocated that the future development of new technology, such as high-density charge clusters (Kenneth Shoulders' U.S. Patent 5,018,180), will provide the technology for non-polluting on-board battery chargers.

The authors do encourage the development of other technological solutions. One solution, which will be as acceptable to MIT as cold fusion, is the use of the new high-efficiency electric motors. We suggest that the authors follow the progress of the two Japanese inventors who are claiming the development of electro-magnetic motors that are 200 to 400 percent efficient. **If either the Teruo Kawai motor (patent EP 0 630 096 A1) or the Yasunori Takahashi motor (*The Sunday Times, 10 Dec 1995)* is as efficient as depicted, then the technological revolution to replace outmoded fossil-fuel vehicles has begun in earnest.**

TARGET DATE FOR MANDATED EMERGENCE OF ELECTRIC VEHICLES SET BACK

Electrifying Times, vol 3, no 3, Winter 1995-96, pg 1.

Automakers claim the advanced battery technology and infrastructure cannot be mass produced in time to meet the 1998 mandate. It is the contention of *Electrifying Times*, after investigating numerous battery propulsion technologies, that too much money and effort has been spent on electrochemical battery technology and not enough on Electromagnetic, clean fission or fusion, or superconductive technology. This issue will address the emergence of other more feasible technologies. The information contained herein will give you some idea of how a 400 mile-per-charge electric superconductive, fusion, or fission car is feasible. With this technology, the balance of payments problem due to excess oil imports and cash outflow to other oil-rich countries, will be significantly reduced, allowing more Hi-
Tech jobs in the United States.

CONGRESS URGED TO INVESTIGATE EV BATTERY STUDY

"Advanced Transportation News Notes" issue 95-13 *Electrifying Times*, vol 3, no 3, Winter 1995-96, pg 8.

11-2-95, Washington, D.C. - A nonprofit research group is asking Congress to investigate charges of conflict of interest in a Carnegie Mellon University (CMU) report that predicts lead hazards from electric vehicle (EV) battery production, reports *Electric Utility Week*. The International Center for Technology Assessment (CTA) is charging that CMU's research "is inaccurate and may have resulted from vested interests in the oil and automobile industries opposing the adoption of [electric vehicles]." CTA said several oil and auto companies helped fund the CMU team that produced the report through contributions made to CMU's Green Design Consortium.

AUTOMAKERS' EV PRICE ESTIMATES HIGH, STUDY SAYS

"*Advanced Transportation News Notes,*" issue 95-13 *Electrifying Times*, vol 3 no 3, Winter 1995-96

30 Nov. 1995, Upland, CA - Electric vehicle (EV) cost and retail price estimates currently being publicized by automaters are arbitrarily high, says a new study by an independent alternative-fuels research organization. The study by Green Car Media analyzes how the auto industry computes research and development costs and prices into its new models. It concludes automakers aren't treating EVs the same way they do their conventional cars and trucks. Cited are examples such as Chrysler's Viper, a low-volume car whose substantial development costs aren't passed along in its pricing, as well as GMs' Saturn and Fords' just-introduced '96 Taurus/Sable. The *Pricing For Success - Using Auto Industry Models to Review Electric Vehicles Costing and Pricing* study says skewed pricing estimates are being used by automakers and oil companies to make inaccurate sales projections.

WORLD SPEEDBOAT RECORD SET

Electrifying Times, vol 3, no 3, Winter 1995-96, pg 5

Dave Cloud of Seattle, Washington, set a new World Kilo Record for electric-powered boats with a record speed of 70.59 mph. The record was set at Devil's Lake near Newport, Oregon, October 8, 1995.

REPORTS ON GMC EV

Courtesy of Trevor Osborne, reported in *The Western Australian* newspaper (date and page not given)

The first electric passenger car to be released by a major company will go on sale in the U.S. this year, say company sources in Los

Angeles. It is a 2 seater with a top speed of 120 kmh, range of power 145 km, and a price tag of more than $47,000 (Australian).

General Motors Corporation touts the EV-1 as the wave of the future, and its answer to the lower emmissions mandates. But it still relies on 26 lead-acid batteries which have a life expectancy of 40,000 to 80,000 km, and requires a special recharging circuit installed at the driver's home. There will be tax incentives offered in many areas that offset $5-10 thousand of the car's cost.

Although the EV-1 will not be marketed in Australia yet, it was partially developed from the Australian involvement in the design and construction of Sunraycer, the winner of the inaugural 1984 Darwin-to-Adelaide race.

Miscellaneous

"FREE ENERGY" AS SEEN ON BRITISH T.V.
by Harold Aspden

On Sunday, 17 December 1995, viewers in U.K. saw an hour-long T.V. program which, at long last, puts across the clear message that "free energy" is on the way. In our *New Energy News* forum we already know much of the substance of what was covered, but it may be of interest to have this report.

The program was featured in the EQUINOX series which appears periodically on our T.V. Channel 4, its title being "It Runs On Water."

In the opening stages Arthur C. Clarke explained how there were four stages in the way scientists react to the development of anything of a revolutionary nature. "Free energy" was now working its way through these four stages of reaction, which were:

a) "It's nonsense,"
b) "It is not important,"
c) "I always said it was a good idea" and
d) "I thought of it first."

The scene moved to Rome, Georgia where Jim Griggs of Hydrodynamics, Inc. demonstrated the assembly and operation of a "hydrosonic water pump" which operated over-unity by producing hot water or steam with energy in excess of the electrical energy input to the pump motor. "Over-unity" was confirmed by satisfied customers, including the Albany Fire Station, where engineers from the "local university" and the "local power company" had been called in to verify the over-100% efficiency.

The presentation was impressive. A drum-type rotor close-fitting within a cylindrical housing had numerous holes in its surface, which presumably produced vortices and turbulence and acted as a pump driving water through the apparatus.

The "problem" it seemed was that Jim Griggs was not a scientist cast from the academic mold, so the technology had to be somewhat suspect - even though it worked!

I was impressed, as were many of my friends who saw this T.V. program, but I later, on reflection, found myself asking why we were not assured that the pump housing was not, in fact, cooling down.

To operate over-unity, a pump producing hot water must either capture "aether" energy or so-called "zero-point" energy to cool the aether or it must cool the pump housing to keep the energy balance. The latter might seem illogical if hot water is being produced just inside the housing, but "logic" cannot be relied upon where "free energy" is concerned. However, the operation of the conventional heat pump needs to be kept in mind, just in case there is a low temperature heat sink (the outer casing of the pump).

Commentary by Frank Close, who is in charge of theoretical physics at the Rutherford Laboratory, in U.K., then assured us that if excess energy production could be demonstrated it would overturn 300 years of experience by breaching the Principle of Conservation of Energy. That was enough reason for him to remain at the first stage of Arthur Clarke's introduction.

To counter that, Paul Czysz, Professor of Aeronautics at St. Louis University, then took up the theme in a positive way. He was well past the second stage in Clarke's list, but not quite at the third. The reaction "It's important; we should be taking it seriously" would best describe his stance.

Next came reference to Tesla and from there we were introduced to the Chernetskii theme, 5:1 over-unity power generation in Moscow using plasma arc discharges. This we knew about from the Novosti Press release 03NTO-890717CMO4 in 1989. The facade of an academic institution in Moscow appeared on the T.V. screen. Then there were shots of an apparatus working and illuminating a set of lamps. Hal Puthoff had visited Chernetskii in 1991 to witness the device working, but sadly Professor Chernetskii had died shortly after that, in 1992, and that free energy pursuit had not been taken up.

Upon hearing this my thoughts switched to the Correa research findings in Canada and the U.S. patented discovery of how to generate electrical power with similar "free energy" gain using plasma arc discharge techniques. Of particular importance here is that the U.S. Patent Office has actually granted the Correa patents [*NEN*, Dec. 1995, p 5] even though they are very clearly biased on performance efficiency data well over unity. This is in sharp contrast with their posture on cold fusion, where the patent examiner takes the law into his own hands, as it were, meaning the laws of physics rather than patent law.

I note something I heard from a later discussion with a U.K. colleague, who had first told me about this T.V. documentary while it was being put together, on the point on how this plasma tube demonstration was obtained. Based on the data in the Novosti Press Release a mock up demonstration had been set up in London at the Royal Institution where Michael Faraday made his discoveries.

We were therefore taking strength from what Hal Puthoff had to say about his Moscow visit: "It was a dramatic demonstration." "I was impressed ... didn't sleep that night .. was it a trick?" On his return to Austin, Texas, Hal Puthoff arranged for Chertenskii to be invited to USA to further the research, but Chernetskii's decease precluded that. The commentator then said "No one has taken up his research."

Well, I thought, although no one had taken up Chernetskii's research, the Correa technology under development in Canada would mean that over-unity energy generation using plasma remains with us and 1996 should see progress on that front. [The work by Kucherov, Karabut, & Savvitimova has also shown excess heat generation from a "glow discharge." --Ed.]

After Hal Puthoff's review of the Chernetskii story there was a very substantial treatment of the Stan Meyer activity in generating hydrogen from water. This included a fascinating demonstration of an apparatus comprising a column of water in which there were several pairs of concentric alloy metal tubes functioning as electrodes.

Upon switching on the electrical power there was instantaneous emission of gas, the combustible properties of which were said to be three times the electrical input, in energy terms. This was supported by Dr. Keith Hindley, a U.K. research consultant, who had visited Meyer several times.

By this time viewers had seen three demonstrable "free energy" technologies, but then the scene switched to Florida and James Patterson. He showed us a test cell and explained how he had discovered that 1300 beads having a metallic coating formed by layers of Ni-Pd-Ni when compacted in the cell and immersed in water could be used to generate excess heat by pulsing electrical current through the cell. Dr. Dennis Cravens then explained how his tests on a Patterson cell indicated heat energy output some tens of times greater than electrical energy input. Pulsing was the key and, in this respect, there were similarities with Stan Meyer's apparatus.

We saw Hal Puthoff several times during this program, at his Institute base in Austin, Texas, as someone of academic standing interested in knowing the full truths of the "free energy" prospect and equipped and willing to engage in definitive tests and evaluation of the performance of over-unity devices. We saw Paul Czysz throwing his academic weight fully into the "free energy" and stressing its commercial and political significance. We saw Keith Hindley as a U.K. proponent urging interest in "free energy," but explaining how much of the difficulty arises because the experimental results on test apparatus are often different every time it runs. This, he said, means that there is "no control" and scientists "could not do work" (meaning evaluation and testing) on that basis.

Yet, to me, the task of the scientist is all the more exciting if a device has its own independent character and presents a challenge. If it were just a matter of testing to verify operation then that is work for a technician, not a scientist.

Before Arthur C. Clarke ended the program on a positive note, the "voice of doom," that of Frank Close, explained how it was not feasible to risk one's career by seeking institutional research funding for such a project. He said he would "gamble his mortgage" in betting that there was nothing worth pursuing in this "free energy" hope. (I wonder what odds are on that offer?)

I have very good reason for believing that a radial electric field set up between a cathode and a concentric cylindrical anode will develop "vacuum spin" which draws in energy from the aether.

I cannot resist adding here my own observation: if the free energy source comes from an electrical coupling with something in motion in the aether, then that something could be a spin about a fixed direction in space. In that case, bearing in mind that the laboratory test bench on body Earth reorientates its direction in space as a function of time of day, I would expect the performance of such a "free energy" apparatus to be "different every time the device runs." After all, a clock ought to give a different reading every time one looks at it!

Nor can I resist noting that I have very good reason for believing that a radial electric field set up between a cathode and a concentric cylindrical anode will develop "vacuum spin" which draws in energy from the aether. This energy (as in the homopolar magnet N-machine) is shed as electrical charge displacement and enhances ionization in the water if between those electrodes. In the Patterson apparatus the metallized beads facilitate recombination of ions to produce heat, whereas in the Meyer apparatus the ions are segregated on the separate electrodes and form gas molecules of hydrogen and oxygen at the respective electrodes. Even in the Griggs hydrosonic pump I wonder if the drum rotor, being a metal conductor rotating in the Earth's magnetic field but separated from the casing by a thin layer of water which has a high dielectric constant, might allow vacuum spin build-up owing to the Faraday disc induction of a radial electric field. (These comments will be better understood when I publish what I have to say on the "virtual inertia" theme.)

Meanwhile, there were two messages that came across loud and clear from this T.V. program. These were (1) "We know how to gain access to free energy but cannot explain why our inventions really work," and (2) "If only we had a theory explaining all this we could interest scientists so that they could support, rather than oppose, what we are doing." As to the theory, though perhaps not the

experiments, I see no reason to dispute the wisdom of Arthur C. Clarke's words, and so, to show we are very nearly there, I claim to be one of the first to say "I thought of it first!"

EINSTEIN'S SECOND POSTULATE

Courtesy of Dr. Gazdag

Lázló Gazdag (Janus Pannonius Univ., Pécs), "Einstein's Second Postulate," *Spec. in Sci. & Technl.*, vol 18, 1995, pp 150-152, 1 fig.

AUTHOR'S ABSTRACT

The Michelson-Morely experiment. In 1905, Einstein published in the *Annalen der Physics* his article entitled "The Electro-dynamics of Moving Objects," in which he elaborated on the theory of special relativity. The theory is built on two postulates:
-- Postulate One: All motion is relative (this is easy to understand)
-- Postulate Two: The speed of light is constant in all inertial systems.
This second postulate causes the biggest headache, because "it goes against all reason."

Einstein started out from Michelson's experiment that had been carried out in 1883 and then repeated by Morely in 1887, which refuted the idea that there is an absolutely inert aether. It turned out that there is no such static medium which, in any case, would have to have unusual characteristics.

This inert aether would have to be super-fine, after all the planets move in it without any reactive force, and yet it would have to be super hard (solid), since light is a transverse wave and such waves only travel in solid objects.

...Flow, wave propagation. Flow characteristics of the super fluid medium have been revealed by Piotr Kapica using an ingenious experiment. He stated that physics has to progress in two directions, one is to the sources of energy, the other is to research into low-energy condensed mediums. History, the war and the cold war have interrupted progress, and research into atomic energy came to the fore, while the problem of low energy condensed mediums were forced into the background.

... Let us suppose that the aether does exist and has a quantum structure, in the form of a very dense but superfluid field. Let light cause its vibration. The source of light vibrates the components in various states of motion all at the same time, but those in a different state propagate with a different speed. We can also say that electromagnetic waves do not only have frequency spectra, but also have speed spectra.

... In the inertial system of the observer, there are always motionless aether components in relation to himself. In this inert segment, waves with *c* velocity exactly propagate towards the observer and he sees them. If the observer is in motion, then other segments will be inert in relation to him, and now he observes their vibration.

EDITOR'S COMMENTS

Gazdag has an interesting concept. We do know that in the late 1920's Michelson & Gale showed that the earlier Michelson-Morely experimental results were in error. That the aether could have both a frequency and a velocity spectrum is an interesting concept. **A challenge to our readers: How can we easily test this concept?**

THE MUSHROOM CAVE AND THE SECOND LAW OF THERMODYNAMICS

By Harry Dart, January 19, 1996

The Second Law of Thermodynamics is considered by most physicists to be the law that prohibits perpetual motion machines. But the Second Law is false, as is shown in the following description of "The Mushroom Cave."

Consider a very large cave deep in a mountain on the surface of the earth, completely sealed from the outside world. The cave consists of two large "rooms" connected by a passageway. The cave is inhabited by a group of ordinary "humans," similar to those who were locked up in the "Biosphere" near Tucson, Arizona for a couple of years. There is water, air, and other things that are required to sustain life in the cave.

Initially, the cave is totally dark. The air temperature is a constant 65° Fahrenheit, which is the same temperature of the rock mass at that depth in nearby regions. The first room is large, having a floor area of many acres, and its soil is suitable for growing mushrooms of the edible kind. The "cave men" start the experiment with a supply of mushroom spores which are like seeds from which the mushrooms sprout. They plant the spores in the soil of the first room, where they grow rapidly in the darkness, taking carbon dioxide from the air along with energy from the air, and converting it into the carbohydrate material that constitutes the mushroom. This is an endothermic reaction in which the taking of energy from the air in the first room reduces the temperature of the air in the first room, and transfers and concentrates that energy into an equal amount of energy that is stored in the body of the mushroom. In short, this process is a form of reverse entropy.

When the mushrooms are mature, the cave men harvest them and take them to the second room, which is also very large, with a floor space of many acres, where they are dried out, and then burned under a boiler which produces steam, which in turn drives an electric generator that produces light. The process that takes place in the second room is an exothermic reaction that heats the air in the second room to a temperature greater than 65°F. Meanwhile, some of the mushrooms are eaten by the cave men to supply the energy they expend in their daily activities. The digestion of the mushrooms by the cave men also constitutes a form of burning which contributes to the temperature increase in the second room. With the electricity generated from the burning of dried mushrooms, the cave men can

manufacture ultraviolet lamps which in turn will enable them to grow other types of plant life that, in the outside world, require sunlight to grow. In that way the cave men will be spared the necessity of eating nothing else but mushrooms. They can grow citrus fruits, sugar cane, cabbages, and other food that will supply all the vitamins necessary to a healthy life. Conceivably, they can import cattle from the outside, and as their civilization develops, they can produce milk, cheese, meat, and even cowboys, complete with wide-brimmed cowboy hats. The horses upon which the cowboys ride will have to be imported from the outside.

This scenario is not as far-fetched as it might first appear. In the "Copper Queen" mine located inside a mountain in Bisbee, Arizona, many levels of passageways were made within the mine, and mules were introduced as a source of motive power to pull the ore carts. The mules never left the mine, and in time they became blind. Their food was brought in from outside, and the "leftovers" gave rise to a large population of rats that also lived continuously in the mine. The main difference between the Copper Queen mine and the mushroom cave described above was that the food for the mules came from outside, rather than being grown in the mine.

The mushroom cave is an example of the fact that a perpetual energy machine can exist without violating any physical principle, other than the Second Law of Thermodynamics, which states that even though a system of endothermic energy can be incorporated within the machine, the exothermic processes will eventually dissipate the energy within the machine. In the mushroom cave, the energy within the cave can be "recycled" endlessly without any loss to the outside world, the average temperature of the cave being identical to the temperature of the surrounding matter. The heat generated by the exothermic processes in the second room will flow to the first room to replace the energy taken from the air in that room. There will be no energy flow between the cave and the outside world for billions of years. The assumption that the heat in the earth will eventually be dissipated into outer space is not warranted, for the heat in the earth is supplied by fission of heavy elements, that will last for billions of years, and probably also by fusion processes not yet well understood, not to mention flexing of the earth due to tidal effects. While it is likely that the mushroom cave would ultimately be destroyed in some cataclysmic astronomical event, there is absolutely nothing to support the fantasy that the universe is gradually "running down," as predicted by the Second Law of Thermodynamics. The concept of total entropy, on its face, violates the conservation of energy principle. Under the theory set forth in my paper "A New Alternative to the Big Bang Theory," published in *Apeiron*, for October, 1993, photons going through space lose energy in the form of tiny particles which subsequently recombine into electrons and protons. These form hydrogen gas, and the whole process of star formation begins again.
[This loss of energy by photons possibly explains the red shift. Ed.]

KEEYEYNET REPORTS ON EXPERIMENTS

Jerry Decker, KeelyNet BBS Newsletter, 17 Jan. 1996

Several months back, a KeelyNetter provided the address for a company called Creative Science Research Labs. Don Kelly of SEA (Space Energy Association) newsletter also sent a flyer advertising plans for a 200 HP Fuel-less Generator, a Gravity Motor, and a plan set to convert water into hydrogen for fuel. A video is also offered for the 200 HP and Gravity Motor. The 200 HP motor is a simplified Ed Gray design which is clearly shown in the video.

Gray did experiments with high voltage capacitor discharges into fine wire coils to produce a high density magnetic spike. When a magnet (or another electromagnetic coil) is placed on top of another coil and high voltage is dumped into it, the top magnet or coil will be thrown up towards the ceiling. Gray indicates 3000VDC (photoflash) capacitors as used in xenon flashtubes. This is the basis for his multi-cylinder engine.

The Creative Sciences group uses 500-6000 volt pulses to produce the high density magnetic spike. In the video, one of these electromagnet coils is placed on top of another and the bottom one is connected to one of these charged capacitor banks, it instantly jumps high into the air and is caught by an off camera assistant.

The most interesting demonstration, to my view, was a single cylinder motorcycle engine with the head removed. One of these electromagnets is attached to the top of the cylinder. When the cylinder moves to the TDC (top dead center), it comes into very close proximity to a fixed electromagnet. At that moment (TDC) the high voltage is applied to cause a downward thrust. It really fires the imagination to see this principle practically applied in this fashion.

THE PASSIVE MICRO-INDUCTIVE ARRAY AS A NOVEL ENERGY CONVERSION SYSTEM

by Nicholas A. Reiter and Dr. Samuel P. Faile, 10 January 1996

I. INTRODUCTION

Since June of 1995, experimental observations have been accrued which support the existence of a novel energy conversion system consisting of unique geometries of wire conductors. As device characterization and theoretical modelling are still far from complete, at this time we prefer to consider our discovery a "system," rather than an "effect." We have, however, since June, referred to this system casually and interchangeably as the "Gibsonville Effect," and the "Faile-Reiter Circuit."

Essentially, we have found that long wire conductors, when looped and compressed into certain non-inductive, or rather micro-inductive arrays; and connected in series between two diodes, produce potentials and currents of measurable and potentially useful magnitude. Our current working hypothesis is that said arrays act as

an antenna or transducer for an as of yet undefined time varying or motional E-field. The system does NOT appear to be an inductive EM pick-up, nor does it seem to function as a classical RF detector circuit. In this report, we will summarize the empirical observations made of these systems, and offer up some possible practical applications and theoretical speculation.

II. BACKGROUND

Since 1993, Dr. Faile and I have conducted several series of tests on "topologically interesting" coils and arrays. Many of these devices consisted of knotted, looped, twisted, and reflected conductors. Among early experiments were attempts at quantifying and defining apparent bio- and psycho-interactive effects noted by volunteers when electrical current is passed through the devices. Other tests, which have thus far given indeterminant results, involve checking for mg level weight changes in powered devices. It was not until June of 1995, however, that we considered testing our arrays for measurable energy output. We allowed ourselves to speculate that certain geometries might act as transducers for suspected vacuum or space energy.

Earliest tests along these lines consisted of placing a single Germanium diode (1N31A) into arrays at their mid-point, then checking for a DC output. A set of perhaps twenty or so arrays were tested in this fashion. Most showed absolutely no output, as measured with a Fluke77 DVM. However, three specific pieces of similar geometry DID seem to produce a minute, but reproducible, open circuit voltage (Voc) on the order of several millivolts. **These arrays all belonged to a geometric family which we had labelled CADUCEUS BRAID, or CAD BRAID for short**.

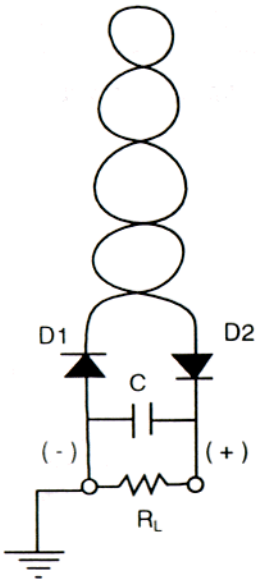


Fig. 1

The next phase of testing involved replacing the Fluke77 with a Kiethley 175 lab multimeter. The Kiethley had a much higher current resolution than the Fluke (.01 μA) and was felt to be a more reliable unit overall. The testing location was moved several times geographically to assess the impact of local EM noise on array outputs. Currently, most testing is being conducted in a Gibsonburg, Ohio home garage; a comparatively EM quiet environ.

By late summer, we had arrived at a basic system form which gave consistent enough results for in-depth testing and effect definition. (Fig. 1). A pair of diodes with the array in series between them gave far better results than the single mid-point diode used initially. One major artifact was found and corrected in November 1995. The Kiethley 175 was producing 60 cy and RF EM noise which was apparently being received and amplified by the array system, and producing high readings which could not be reproducibly read by the battery powered Fluke, or other meters. This problem was eliminated by adding a good ground to the meter (-)input. We have since had close agreement among several meters, and have continued to use the Kiethley 175 as our primary instrument.

III. SYSTEM CHARACTERISTICS AND PARAMETERS

A. Basic Description of Operation

An insulated wire conductor, of length from a few feet up to over 220 feet is looped and wound into the desired pattern. (Appendix A illustrates several of these.) Typically CAD BRAID or CAD VIRTUAL arrays are somewhat planar, of a length considerably greater than width. Terminations are typically made at a single "end". To each terminal lead is attached a single diode; oriented as previously shown in forward and reverse polarity. At the output of the diodes, a capacitor of modest value; 0.1 to 1.0 μF, is added to filter the rectified signal. A load or meter is connected across the output, and a solid connection to a good earth ground is typically added to the (-) leg or meter terminal.

Optimum orientation of most arrays is horizontal, or parallel to the earth ground plane. As will be shown later, altitude above ground is an important factor. Thus, a certain earth to array separation is required; a long wooden table or stand is a preferred work space.

Depending on geometric form of array, type of diodes, and several other factors, measured DC outputs range from several millivolts to over 5 volts Voc (10M-ohm meter input impedance). Short circuit currents (Jsc) up to 5 μA have been measured repeatedly. **It should be noted that these output values are for array systems in a completely passive state, with no external excitation applied**.

B. Form of Array

Experimentally, we have determined that several general "rules of thumb" have applied in building arrays for greater power output. No relationships clear enough for deriving calculations have yet been uncovered, but the following FUNCTIONAL relationships are considered as key:

1. Conductor length is maximized.
2. DC resistance must be minimal.
3. Inductance (L) should be as small as possible. (Typically less than 10 μH)
4. Several tests have indicated that ferrous conductors are better. (e.g., Fe, Ni)
5. Maximum planar area, or space volume should be enclosed by the conductor geometry.
6. A recursive or repetitive nature to array turns and loops seems to be a strong factor.

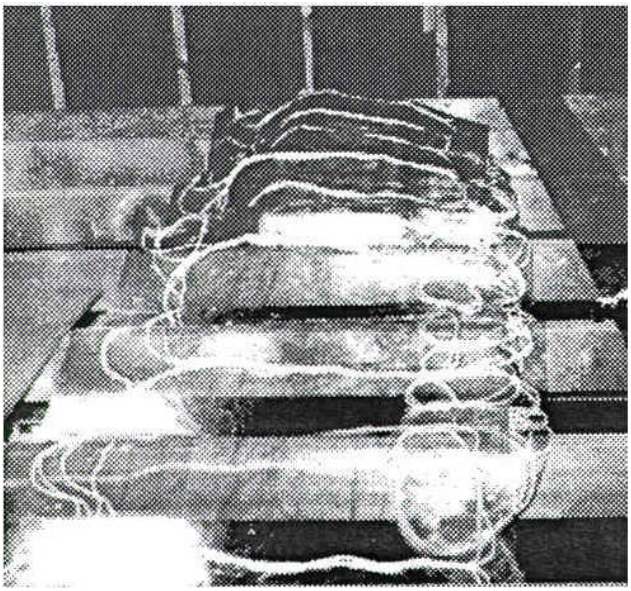


Fig. 2

Fig. 2 shows our largest test array to date, a CAD VIRTUAL 20 model wound with about 224 feet of 14 ga insulated "zip-cord" wire. The array is affixed to a sheet plastic backing. It is positioned horizontally across wooden garage rafters at an altitude of about 3 meters. In this case, 1N914 diodes and a .33 µF capacitor are attached to rectify the output, which is being read by the Kiethley 175 on the ground floor of the garage. On 23 Dec. 95, at 0930, output Voc read 5.221V. Jsc was .59 µA.

C. Diodes

First tests were conducted with Germanium diodes (1N31A). Later, various other diodes were attached to arrays and found to be superior in producing higher Voc values. In some cases, we have seen that Germanium diodes, especially old 1N34 units produced best Jsc readings, to the detriment however, of Voc.

Early examination of the raw array output with an oscilloscope showed a broad-band spectrum of what is best described as RF white or pink noise. Components of this spectrum appeared to extend beyond the response of the scope, a Sencore SC61 waveform analyzer. We reasoned that if this was the spectrum being rectified, then best results should occur using the fastest diodes possible. On 22 Sept. 95, a test series was run on the 2XCAD40 (Coax) array with different diodes and a 1.0 µF filter capacitor:

Diodes	Mtl.	speed	Voc	Jsc
1N31A	G	Khz	.912V	.41 µA
1N4001	Si	low Mhz	4.450V	.45 µA
1N914	Si	4 ns (250Mhz)	4.782V	.48 µA
ECG584	Schottkey Si	1 ps	4.971V	.49 µA

Limited tests have also been run with vacuum tube rectifiers (1B3GT), and actually gave extremely high currents and respectable Voc's (5.085V, 20.2 µA on 20 Sept. 95). However, we decided to concentrate on passive solid state devices for practical reasons and to eliminate possibility of artifacts from thermal and power supply noise. Currently, most of our routine testing is being conducted with 1N914 Si diodes.

D. Characteristics of Incident Energy.

In order to model our observations, we have sought to define the form of energy which is being converted to DC electricity by our arrays. Early examination with Tektronix and Sencore scopes showed a broad spectrum "noise", apparently extending from 60hz on up past the instrumentation limits. (VHF and possibly higher.) In late October, we observed on one occasion what appeared to be audio frequency modulation on top of the "noise". This prompted an interesting side excursion. We constructed a simple product detector circuit using a 741 op amp and LM386 audio amplifier. The output from the LM386 was run into a small 8 ohm speaker. The intent was to "listen in" on any AF modulation being picked up by the array.

What was heard was surprising. Crackles, whistles, clicks, and groans were interspersed with apparent shortwave voice and music programming, fading in and out. While the full scope of this particular experiment would unduly extend this report, it suffices to say that some of our arrays were acting like extremely effective RF "spectrum antennas".

Experiments have been conducted for the purpose of trying to excite the system, or expose the array to incident radiation and fields to stimulate a greater DC output. We have found:

1. Waving a strong magnet over an array did not cause any noticeable current jump at the output, probably due to the low value for L.

2. Placing an array near a 110 Vac outlet, or a plugged in appliance, even if said appliance is not turned on, will cause a slight rise in output.

3. A small table top model Van De Graaf electrostatic generator was placed near an array, and turned on. No change in output was noted. However, if said Van De Graaf was moved or wagged back and forth near the array, a strong jump (over 30%) in output was noted. We believe this to be a key observation. (Longitudinal E-waves?)

4. A home-built flyback oscillator plasma-bulb, with an output of about 5kV at about 20 Khz was set a short distance away from an array, and turned on. A very strong rise in Voc and Jsc was noted. This effect increased drastically when the operator would place one or both hands on the plasma bulb. On 17 Sept. 95, when the plasma bulb was turned on 1 meter away from the 2XCAD40 connected at the time, the array output rose from 4.752V at .49µA to 7.640V at 21.2 µA. On another occasion, by laying hands on the plasma bulb, a short term output of over 80V and 530µA Jsc was observed.

The possibility that RF was feeding directly into the Kiethley meter via a ground path was considered. To test this, we ran a second ground

second wire was touched to the operating plasma bulb, thus providing a direct (as opposed to air capacitively coupled) path back to the array ground region. Only a very slight rise in Voc was noted.

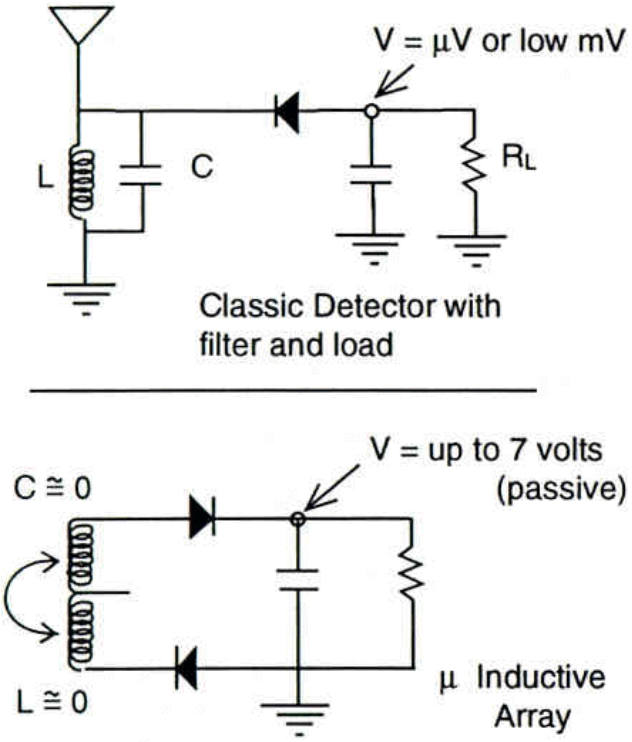


Fig. 3

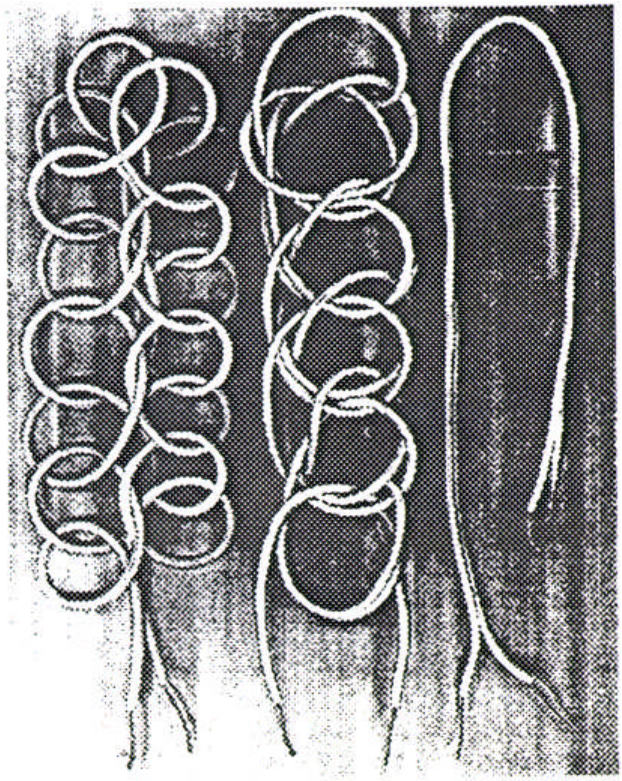
It was observed on 15 Oct. 95 that a piece of aluminum foil measuring 18" by 18" placed halfway between the plasma bulb and a small array blocked the excitation effect, attenuating it to a point where only a slight rise was noted over the normal passive output. A small hole was made in the center of the foil, and was gradually enlarged to the point where the array output Voc began to pick up and rise over 20%. **It was found that when this occurred, the orifice size was at about 15 to 16 cm. Most assuredly, our little plasma bulb is not producing Ghz EM radiation. Is another effect, or another waveform, at work here?**

We feel that it is overly simplistic to say that our system is only an RF detector circuit converting a wide spectrum of our man-made EM into DC. Certain differences remain between classical detector circuits and our dual diode array system. (See Fig. 3) Yet our system is undeniably picking up energy from manmade sources. One hypothesis we are currently considering is that our arrays are acting as resonant structures for time varying and motional E-fields, or the E component of natural and artificial EM. Constructive interference may be occurring in certain of the array geometries. We also are not ruling out possibilities of even more surprising factors such as space energy or atmospheric cold fusion.

CONTINUED NEXT ISSUE

The concluding half of this article will contain sections on Electrical and Physical Considerations; Current and Proposed Applications; Theoretical and Non-Electrical Considerations, and Conclusions.

APPENDIX A: ARRAY GEOMETRIES



Shown are three coils. The CAD BRAID (A) is knotted and has a caduceus character. The CAD VIRTUAL (B) is a knitted coil. The pictorial illustration of steps in constructing these devices is available from Dr. Faile. A simple but effective alternative is also shown. The TRACK (C) uses two conductor insulated wire rather than the single conductor wire used for (A) and (B). The two parallel conductors are connected at one end, as shown. The TRACK coil, with roughly parallel features, may be considered as a single Hooper Coil loop with bifilar character. A large TRACK coil four inches wide and 34 ft. long using about 70 ft. of extension cord wire was recently used in a demonstration where an LED flash was obtained repeatedly. The simple TRACK coil can be modified to have an undulating or serpentine character to provide more power.

ELECTROGRAVITICS SYSTEMS BOOK

Thomas Valone, ed., Electrogravitics Systems: Reports on a New Propulsion Methodology 2nd ed., 1995, Integrity Research Inst. (1413 K Street N.W., Suite 204, Washington DC, 20005, 800-295-7674), illus., 120 pages.

CONTENTS:
Foreword, *Elizabeth Rauscher, Ph.D.*
Electrogravitics Systems, *Aviation Studies, Ltd.*
The Gravitics Situation, *Gravity Rand, Ltd., Div. of Aviation Studies, Ltd.*
Negative Mass As a Gravitational Source of Energy in the Quasi-Stellar Radio Sources, *Banesh Hoffman*
The U.S. Antigravity Squadron, *Paul LaViolette*
Appendix: Collection of T.T. Brown's Patents

STARBURST FOUNDATION PRESS RELEASE

By Paul A. La Violette

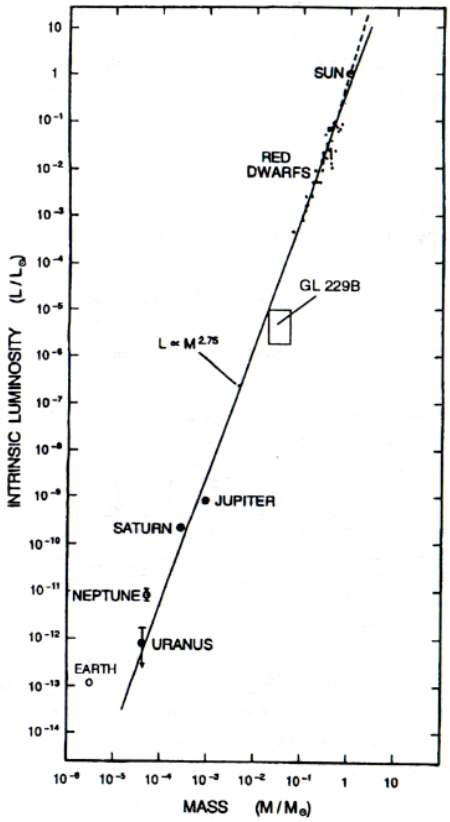
Brown Dwarf Discovery Confirms Theory of Spontaneous Energy Generation

Observations of the mass and luminosity characteristics of the recently discovered brown dwarf GL 299B confirm Dr. Paul LaViolette's prediction that planets and stars alike are powered by a source of free energy which he has termed "genic energy."

Brown dwarf Gliese 229B orbiting its primary star. [Hubble Space Telescope, Courtesy of Nakajima, Kulkarni, Durrance, Golimowski, NASA]

The Planetary-Stellar Mass-Luminosity Prediction:

In the late 1970's LaViolette developed a nonlinear system that effectively modeled many of the characteristics of subatomic particle and field phenomena and resolved many problems that plague standard physics (LaViolette, 1985, 1994, 1995). One of the inescapable consequences of this nonlinear system (known as Model G of the subquantum kinetics physics approach) is that photon energy is not necessarily conserved. **Rather, photons gradually redshift (decrease their energy) in regions where Model G is subcritical and gradually blue shift (increase their energy) in regions where Model G is supercritical.** [Such time-variation is a mode of behavior typical of nonlinear wave generator systems.] In Model G, the ambient value of gravitational potential is what determines whether the system is subcritical or supercritical and to what extent. Thus in intergalactic space where the gravitational potential is least negative Model G will be subcritical and will cause photons to redshift (see LaViolette, 1986), but in the vicinity of galaxies where the gravitational potential is quite negative it will instead be supercritical. So photons residing within planets and stars will gradually blueshift and produce an energy excess (called genlc energy). Since both the heat capacity and gravitational potential of a body are a function of its mass, there should be a specific relation between a body's mass and the genic energy luminosity that will radiate from its interior. As it turns out the exponent for this mass-luminosity (M-L) relation is about what is found for the red dwarf M-L relation. This led to the prediction that both planets and red dwarf stars should similarly conform to a common M-L relation. LaViolette plotted the intrinsic luminosities of the major planets against their masses and found that, in fact, they did fall along the low mass extension of the red dwarf M-L trend line (LaViolette, 1992, 1994, 1995). **This "planetary-stellar" M-L relation, sometimes termed the "LaViolette Relation," also predicted that around 60 percent of the Sun's energy should be of non-nuclear genic energy origin, thereby resolving the solar neutrino problem.**



The planetary-stellar mass-luminosity relation. The box represents the error box for the mass-luminosity coordinate for GL 229B.

The Brown Dwarf Mass-Luminosity Prediction:

LaViolette noted that a further consequence of the genic-energy photon-blueshifting prediction would be that when brown dwarfs would be discovered they should be found to have mass luminosity coordinates that conform to the planetary-stellar M-L relation. Standard cooling theory, on the other hand, predicts no such conformance, except by chance coincidence. LaViolette clearly stated his prediction on several occasions (LaViolette, 1985, 1992, 1994, 1995). As it turns out, the mass and luminosity coordinates for GL 229B, the first brown dwarf to be discovered, fall very close to the M-L relation. Its mass has been determined to be between 20 - 50 jupiter masses and its luminosity is observed to be between 2×10^{-6} and 10^{-5} solar luminosities. The upper left hand corner of this M-L error box coincides with this relation. LaViolette has further predicted that as the mass and luminosity values of this brown dwarf become more accurately determined through future observation, this M-L coordinate should be found to lie even closer to the planetary-stellar M-L trend line.

As an example, if the recent Hubble Telescope measurements indicate that this brown dwarf has a luminosity of around 4×10^{-6} solar luminosities, the subquantum kinetics genic energy M-L relation

predicts that this dwarf should have mass of around 0.013 (+ 0.006, -0.004) solar masses, or 14 (+5, -3) jupiter masses. This range of uncertainty reflects the degree of data point scatter that characterizes the red dwarf M-L data.

References:

P.A. LaViolette, "An introduction to subquantum kinetics," Part I -- "An overview of the methodology," Part II – "An open system description of particles and fields," Part III – "The cosmology of subquantum kinetics," *International Journal of General Systems*, Vol. 11(4) (1985): 281-293, 295-328, 329-345.

P.A. LaViolette, "Is the Universe Really Expanding?" *The Astrophysical Journal* 301 (1986): 544-553.

P.A. LaViolette, "The Planetary-Stellar Mass-Luminosity Relation: Possible Evidence of Energy Nonconservation?" *Physics Essays* 5(4), (1992): 536-544.

P.A. LaViolette, Subquantum Kinetics: The Alchemy of Creation. Schenectady, NY: Starburst Publications, April 1994.

P.A. LaViolette, Beyond the Big Bang: Ancient Myth and the Science of Continuous Creation. Rochester, VT: Park Street Press, September 1995.

The books Subquantum Kinetics ($15) and Beyond the Big Bang ($29.95) may be mail ordered from Starburst Publications (add $3 p+h). For further information mall inquiries to Gravitics@aol.com. or 1176 Hedgewood Lane, Schenectady, NY 12309

Editorial

WHY DO MANY SCIENTISTS SHUN NEW DISCOVERIES?
By Hal Fox, Editor

In my studied judgement (which implies a stronger view than an opinion), the three energy-producing technologies to be commercialized in the near future are the following:
High-density charge cluster (HDCC) technology for electric power production.
New hydrogen energy for thermal power production.
Supermagnet/supermotors (SMSM) for mechanical power.

All three technologies are deemed to be without merit by most of the scientific community! Here are the reasons: Since about 1915, most of the scientific community have accepted the concept of an empty space without an energetic aether. Therefore, any device that claims to produce excess energy from tapping the energy of the aether is without merit because of the unconditional acceptance for over 80 years of an empty aether. The second problem is the strong opinion (contrary to experimental evidence) that any nuclear reactions, especially nuclear fusion, can only take place at extremely high energies (such as in hot plasma physics). It is only slowly being accepted that nuclear reaction can be catalyzed on or near the surface of a metal lattice at low energy levels.

Tell a scientist that you have a rotating machine that produces more power output than input power and he/she will usually cite that such an event is contrary to the **Law of Conservation of Energy**. However, if a scientist will accept the abundant evidence for the existence of an energetic aether, then such a machine becomes an **Energy Transformer and is NOT contrary to the Law of Conservation of Energy**.

Look at the patent history of rotating electromagnetic machines. Dr. Paul Brown [1] cites four pages (about 200 entries) of non-conventional energy patents dating from Tesla to Shoulders. Many of these are electromagnetic devices. **But not one of them has, as yet, been commercialized!** From the viewpoint of a highly-schooled scientist, that is sufficient evidence to strongly diminish his/her interest in rotating over-unity machines. Only when and if such a machine is independently verified by a peer will it become interesting to an academic scientist busily engaged in his/her own specialty.

Although the essence of science is new discoveries, new phenomena, and the pursuit of observed anomalies, the academic presentation of science is teaching what has been previously learned. While attending UCLA, one of the newly-minted Ph.D.s told his class about finding an error in a physics text book. He traced the error back through a series of five cited (progressively older) texts over more than a thirty-year period.

Until there is sufficient indisputable evidence to overturn a previously taught and (usually) unquestioned scientific concept, that concept is an accepted part of the curriculum and the belief structure of most of the science students. Except in his/her area of specialty, usually related to a Ph.D. dissertation, a typical scientist does not take the time to review and question the basic tenets of science. "This is what I was taught and this is what I teach," is acceptable in academia **until there is incontrovertible evidence otherwise.** However, in each scientist's area of specialty that person is usually busily engaged in finding new phenomena and new incremental advances in that specialty are acceptable.

Fundamental new discoveries are now, have been in the past, and will be in the future, difficult for a highly-schooled scientist to accept. These fundamental new discoveries are not comfortable. Such new discoveries mean relearning cherished bits of knowledge. Important new discoveries mean that the carefully developed and assiduously taught **current scientific models have to be changed!**

The world's greatest inventor recently suggested to me that "They teach in universities those subjects that are easiest to teach." He then suggested that we should not have to learn by rote much of the material that is fed by professors and regurgitated in blue books on exam day. "In this day, why don't we just ask our computer for the information that we need?"

How many of you readers have had a course, "Challenging the tenets of science." How many classes have been offered with the book by Peter and Neal Graneau [2] being used as a text? How many universities are currently teaching from the list of ten scientific concepts that have been proven to be incorrect, which are a part of the life's work of Stefan Marinov [3]? Not one, I would guess.

The totality of incremental discoveries and improvements stemming from research and development activities in university and corporate research laboratories **are responsible for the gradual improvements in products and services that add to our perceived comfort, health, and well-being.** The model-changing (paradigm shifting) discoveries seldom come from large government, corporate, or large university laboratories. These groups are too busy with the incremental advances in their areas of specialty. These groups are normally supported by government or corporate research funds. Try to get a research grant for an "over-unity electromagnetic motor," "tapping space energy," or "cold nuclear fusion."

Dana Rotegard recently had a discussion with a member of the Senate energy committee. "With the cutback in funding, it is probable that only the existing research projects of solar energy and wind energy will be funded." So, who will develop the new energy sources for the 21st century? Not the government! Not the Department of Energy! It will be individual experimenters. Small and usually poorly-funded laboratories are the likely sources of new energy. **Garages, attics, and warehouse corners are still the incubators of new technology.** Cold fusion started in Pons' garage in Salt Lake City. Takahashi found his super magnet by accident. Tewari works part-time in an allocated space he is allowed to use because he is a manager of a large power-producing venture. Marinov works in a horse stable to earn money for his experiments. An important new technology (not as yet announced) is being developed in a corner of a welding shop. Shoulders worked in his home and in a two-car garage while funding for his present laboratory was being sought (and found). Cravens taught at a community college and replicated most of the cold fusion discoveries in his garage. Etc.

Is there a better way? Obviously, yes! Will we change? Probably not! However, here are some suggestions:

There is a famous saying, "Evil men prevail when good men do nothing." There are a lot of good persons in the world who strongly desire a better future for their children than to continue burning fossil fuels on a increasingly-polluted planet. Some of these **good persons** are involved in a variety of usually small, local new-energy groups. **It is suggested that we establish a networking arrangement with all such groups where we use the latest electronic superhighway for rapid information exchange.**

The Fusion Information Center will establish a home page on World-Wide Web in the near future. We will post the latest developments in new energy for all of the Web-Walkers to view. Hopefully, this will encourage others to become involved in the finding, building, and marketing of new energy devices. A similar home-page is sponsored by the Institute for New Energy at www.padrak.com/ine/

References:

[1] Paul Brown, Alternate Energy Notebook, published by the author. Available through Fusion Information Center. $39.95 plus $2 p+h.
[2] Peter Graneau and Neal Graneau, Newton versus Einstein, Carlton Press, New York, c1993. A book full of challenges to our commonly-accepted university teachings by a university professor and his Ph.D. son.
[3] Stefan Marinov, "At the 14th International Conference on General Relativity and Gravitation (GR-14)", *Deutsche Physik*, Vol 5, No 7, Jan-March, 1996, pp 48-52, in English.

LETTERS

LETTER FROM ARTHUR C. CLARKE

Dear Hal, [No, not the computer in 2001]

Thanks for the January *New Energy News* that just arrived. A couple of comments you might like to print:

1. My Voice Across the Sea (Harper 1958) contains a chapter "The Man Before Einstein," in which I point out that by 1890 Heaviside had already arrived at a rigorous proof of $E=MC^2$ in his Electromagnetic Theory.

2. Tapping the earth's rotation by gyroscopes -- this was used in a science fiction story, probably in "Amazing," around about 1930. I seem to recall pictures of gigantic gyroscopes many stories high. Unfortunately they triggered earthquakes, so the whole idea had to be abandoned!

Keep up the good work -- I really hope that 1996 is the beginning of the new era. Already there's been spin-off from the interview *The Sunday Telegraph* ran with me on the last day of 1995....

All Best, /s/ Dr. Arthur C. Clarke, CBE

LETTER FROM BILL RAMSAY

Thanks for publishing my "Rodin Coil Design" notes in Dec., 95, NEN. Your suggestion of double-sticky Scotch tape for first wrap seems a good one. Hopefully some *NEN* readers will become interested in experimenting with this novel design.

I apologize for the poor winding order drawing I sent which, no doubt, accounts for the one in the article not clearly showing how it's properly

done. Enclosed are much better ones (courtesy of Nick Fiorenza) which clearly show "start" and "end" points of each winding, proper angular relationships and the necessary empty 10° segment Rodin calls "the major groove."

Also, one test result reported needs comment based on tests run after the article had gone to the printer. The Yellow form, 10 turn, bunched windings coil used to compare conventional and Rodin style interconnections inductances (at end of article) was redone to account for the fact each Rodin style connection passes through the center region effectively adding an additional, albeit loose, turn. There are 24 such connections and therefore added turns.

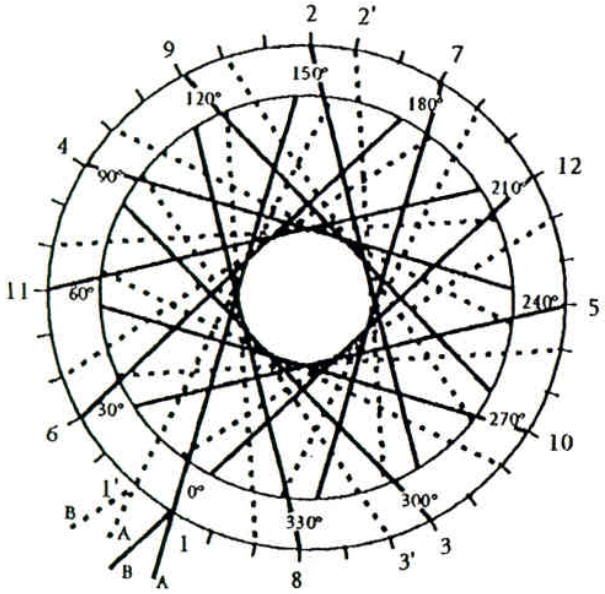


Figure courtesy of Nick Fiorenza

Measurements on the redone coil showed an increase in L from the 222UH (Q.58) reported to 268UH (Q.75) resulting in only a .75% difference. I feel even this is significant but must allow for possible errors. Another series of tests accounting for the added turns and using dense ferrite cores shows differences of about 6% (favoring Rodin connections) which is well beyond possible error. With the following qualifications.

The 1 KHZ internal source of my L bridge can be varied between about 1-14 VRMS of "drive" to the bridge proper. With ferrite cores the higher levels of drive tend to saturate thereby obscuring L differences. This is not the case with air core ones. The 6% increase is with lowest drive levels decreasing to about 1% at highest level, likely because of core saturation.

I would be grateful if some *NEN* readers with more accurate equipment than mine would run similar tests and report their results.

One distinction emerging from other tests here is that Rodin style coils (ferrite and air cores) show significantly sharper resonant frequency responses than conventionally wound ones-all other things being equal (I hope!). If there's interest in these or other tests, I'll be glad to report the results.

A last comment. The omission of extra turns measurement error is not a factor in the coils wound completely Rodin style so the reported test results on these is accurate.

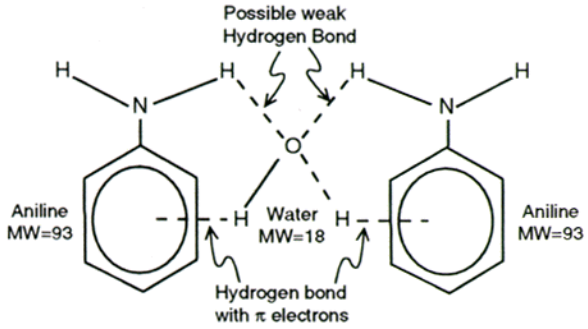
Thanks again for your interest in these novel coils. Many of us sense a great potential in the Rodin work and it's gratifying to see at least some early results hinting this potential is real.

Best regards, Bill Ramsay

LETTER FROM GERALD LINDLEY

In the December 1995 issue of *Space Energy Journal*, there is a reproduction of Dale Pond's report of some over unity measurements reported in the conventional scientific literature.[1] In particular, it mentions excess energy released when aniline vapor is excited into fluorescence. You might be interested to know that this can be explained by using the supergraviton mass of 102 amu as discovered by Harold Aspden and reported in *Fusion Facts* and *New Energy News*.[2]

I propose that water vapor was present in the aniline vapor during the 1935 experiment of Prileshajewa. It has been established in recent years that the pi electrons of a benzene ring, such as found in aniline, can participate in the formation of a hydrogen bond [3]. I propose that a water molecule can form a bridge between two aniline molecules through hydrogen bonding with the pi electrons. Additional hydrogen bonding can take place with the oxygen of water and the hydrogen on the nitrogen to form a stable cluster (see below).



2(93) + 18 = 204 = 2(102)

Proposed Supergraviton Cluster by Gerald Lindley 12/28/95

The molecular weight of this cluster of molecules is equal to the molecular weight of two aniline molecules plus one water molecule. The molecular weight of aniline is 93. The molecular weight of water is 18. Therefore, the molecular weight of the cluster is 2(93) + 18 = 204. This is two units of the supergraviton mass of 102. That is 2(102) = 204.

I have some ideas of my own about the supergraviton mass. A few of them were published as letters in the September 1995 issue of *New Energy News* on pages 17-18. Also, it might be interesting to repeat this experiment and vary the relative concentrations of aniline and water along with pressure and temperature in an attempt to optimize the release of energy.

Sincerely, /s/ Gerald Lindley

[1] Dale Pond, "Over Unity Recognized in Conventional Science," *New Energy News*, Dec. 1995, vol 3, no 7, pp 15-16.
[2] Harold Aspden, "Cold Fusion is a Live Issue," *Fusion Facts*, Sep. 1995, vol 7, no 3, p 14]; and "The 102 Factor...", *New Energy News*, Nov. 1995, vol 3, no 6, pp 5-6.
[3] *Science*, vol 257, 14 August 1992, pp 887 and 942.

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.

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

ENECO: Portfolio of intellectual property including over thirty patents issued or pending in cold nuclear fusion and other enhanced energy devices. Salt Lake City, Utah. Contact Fred Jaeger, Voice 801/583-2000, Fax 801/583-6245.

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

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

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

Hydro Dynamics, Inc.: Hydrosonic Pump, heat-producing systems using electrical input with thermal efficiencies of up to 150 percent. Rome, Georgia. Contact James Griggs, Voice 706/234-4111 Fax 706/234-0702.

JET Energy Technology, Inc.: Design and manufacture of π-electrode systems, calorimeters, and associated equipment and systems. Consulting regarding radiation, materials, and other scientific and engineering issues. Weston, MA. Contact Dr. Mitchell Swartz, Voice 617/237/2625. Fax 617/237/3625.

Magnetic Power Inc.: Introducing the Takahashi Battery Doubler™ in the U.S., which improves the charge release (1.5 to 2.5 times normal battery operation). Sebastapol, CA. Contact Mark Goldes, Voice 707/829-9391, Fax 707/829-1002.

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

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

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.

Institute for New Energy, organization to promote and help find funding for new energy research.
Home Page: www.padrak.com/ine/ contains many important scientific papers and current reports on all areas of research.
E-mail: ine@padrak.com Voice 801/583/6232, Fax 801/583/6232.

New Energy News monthly newsletter for INE, edited by Hal Fox, Salt Lake City, UT 801/583-6232 Fax 801-583-2963.

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

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

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

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.

Now available: *Clean Energy Review*, a technical and scientific discussion prepared for the Canadian Environmental Assessment Agency's panel reviewing nuclear fuel wastes disposal. Discusses transmutation as a possible solution for nuclear waste disposal. $5 U.S. and Canadian, $7.50 other countries.

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 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 P.O. Box 58639, Salt Lake City, UT, 84158.

Meetings

ICCF6
Sixth International Conference on Cold Fusion
will be held 13-18 October 1966, Hotel Apex Toya, Hokkaido, Japan; sponsored by New Energy & Industrial Technology Development Organization (NEDO), Tel +81-3-35-08-8901, Fax +81-3-3508-8902
E-mail mac@iae.or.jp

The conference will consist of both oral and poster sessions covering experimental work and theory.

The Deadline for abstracts is May 1966. More information will be available in the second announcement, issuing in February 1996. Registration fee of ¥40,000 (about $400) includes a banquet and proceedings.

CALL FOR PAPERS
International Association of Science and Technology of Development (IASTED)
International Conference on
HIGH TECHNOLOGY IN THE POWER INDUSTRY
4-8 June 1996, Banff, Alberta, Canada

The aim of this conference is to act as a forum for the exchange of information and experience on all aspects of high technology and advances in the power field.

Submission of papers
The full manuscript (max. four pages) and three copies are to be received by Feb. 1, 1996, for review by the International Program Committee. Full manuscripts must be in the format specified. (Contact IASTED at (403) 288-1195 or Fax (403) 247-6851, e-mail iasted@istd.cuug.ab.ca for specific paper instructions.) Include a statement in your cover letter confirming that if the paper is accepted, one of the authors will attend the conference to present it and pay the registration fee of $400 by 1 April 1996. Notification of acceptance will be mailed by March 1, 1996.

NEW IDEAS IN NATURAL SCIENCES
International Conference
St. Petersburg, Russia
June 17-22, 1996

Call for papers. Subjects include: electrogravitation, cold fusion, transmutation of chemical elements, free energy, gyroscopes and antigravity reaction, inertial propulsion drives, control by rate of time, scalar generation and detection, Mobius surface current effects, single-wire power transmission, heat pumps, unipolar (homopolar) generators, and torsion field.

Send the Name of your paper, your name and address, fax, e-mail address and abstract (10-20 lines) to the Fax number: **7-812-2478924.** Abstracts must be received by 1 Feb. 1996. Also, please send a copy of the complete paper (up to 10 pages and 2 figures) by post to: Dr. Anatoly P. Smirnov, P.O. Box 25, 195290, St. Petersburg, Russia. The papers will be printed in a book in English prior to the conference to help international discussion

Registration fee: US$ 250 (book and simultaneous interpretation of lectures at conference included). Hotel (US$ 63 per day). Use above Fax and address to request information or to register for conference.

ESSENTIAL READING FOR THE NEW ENERGY AGE.....

Infinite Energy *Magazine*

Cold Fusion and New Energy Technology

INFINITE ENERGY is an international technical magazine with outreach to the general public as well. It is written at the technical level of *Scientific American* or *Science News*. To maintain the highest editorial standards, it is written and edited by scientists, engineers, and expert journalists. It is aimed at pioneering scientists, engineers, industrialists, and investors who are entering an exciting new R&D area. This continues to grow explosively, with significant involvement by corporations and institutions in the U.S., Japan, France, Italy, India, Russia, and China. New technology developments and scientific discoveries are being made monthly and reported in the peer-reviewed scientific literature. *INFINITE ENERGY* reports on the latest information that is now pouring in from research centers around the globe. It also features original technical articles by scientists and engineers on the frontier of energy development.

The highly affordable subscription price of this six-issues/year publication of general *and* technical interest is $29.95 for residents of the U.S. and Canada. (To cover first-class air mail, the annual foreign subscription price is $49.95.) All back issues are available. To subscribe to Infinite Energy, please send a check or money order, or credit card information, to:

Cold Fusion Technology, P.O. Box 2816, Concord, NH 03302-2816 USA.

CONTENTS FOR JANUARY 1996