



New Energy News

Monthly Newsletter of the Institute for New Energy

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INVENTORS

Now among all the benefits that could be conferred upon mankind, I discovered none so great as the discovery of new arts for the bettering of human life. For I saw that among the rude people of early times, inventors and discoverers were reckoned as gods. It was seen that the works of founders of States, lawgivers, tyrant-destroyers, and heroes cover but narrow spaces, and endure but for a time; while the work of the inventor, though of less pomp, is felt everywhere, and lasts forever.

Francis Bacon

MORE MOTOR NEWS: 317% EFFICIENCY!

By Dr. Harold Aspden

Those skilled in the design of electric motors will soon become wizards as they practice the black art of producing motors which are powered by a ghost that pure science does not recognize!

It is no longer a question of whether or not a motor can deliver more mechanical power than it consumes as electricity, but rather a question of who will win the race to design the best commercial implementation.

Here is an item of news that follows on from my note of "The Adams-Aspden" collaboration at page 1 of *New Energy News*, June 1995 issue.

On July 7, 1995, I filed a patent application in the U.K. on the motor version that I had then tested. It incorporated permanent magnets which provide the drive torque by pulling rotor and stator poles together with an electromagnetic opposed excitation input pulsation used to weaken that magnetic pull to allow the poles to separate. Of course, as I knew from my tests on a static rig, the electric power needed as inductive input was less than the power produced mechanically by the magnet, but this particular

design of mine is aimed at reducing power wasted in winding resistance.

As befits my skill as a European Patent Attorney, my patent specification had several claims with my first claim worded so as to nudge the prior art as closely as possible without crossing the boundary which distinguishes invention from what is in the public domain. The object of this strategy is to draw citations which hopefully force a small retreat to a

Clean Energy Technologies, Inc. of Dallas, Texas, has announced that they will be demonstrating a working **Patterson Power Cell™** at the PowerGen Conference. This "largest-in-the-world" power generation conference will be held in Anaheim, California, on December 4 through 9, 1995. *NEN* sources suggest that the demonstration unit will be considerably advanced and more powerful than the October 1995 exhibit at the SOFE'95 conference.

new boundary, often that which is declared in the second claim, which one can then settle for. Without such citations there is no feedback to show what the patent examiner sees as active competition.

I have already had that feedback from the patent examiner, just two citations directed at my first claim. One citation was GB 2,282,708, the patent applications which Adams and I have filed. The other citation is European Patent Application 0 630 096 A1 by Japanese applicants, the Tokyo company Nihon Riken, Ltd and inventor Teruo Kawai. The patent was published on December 21, 1994. This patent is recommended reading for **free energy** enthusiasts everywhere.

Now, here is the news! The patent has 19 sheets of drawings - an exceptionally expansive disclosure - and shows several motor designs, all using the above-stated principle, but specifically describes the result of an actual running test on the motor shown in Figures 1 to 3. The following paragraph appears in column 10:

Pure steel was used as a magnetic material. The magnetic material was 30 mm in thickness and formed to have magnetic teeth of 218 mm diameter and notches of 158 mm diameter. A ferritic magnet was used as a permanent magnet. The magnetic force of the magnet was 1,000 gauss. Electric power of 19.55 watts was applied to the electromagnets at 17 volts and 1.15 amperes. Under the above conditions, a rotation speed of 100 rpm, a torque of 60.52 Kg-cm and an output of 62.16 watts were obtained.

So here we have over 300% efficiency in operation with a motor that, in size and in operating principle, resembles the motors I am researching and operating, at a much higher speed. I am not yet ready to publish on my work, but feel this Japanese disclosure which is hidden in the patent literature warrants attention.

At least it shows that we were wise at our first new energy conference in Colorado (April 1993) to focus attention on the Adams motor. After all, his success in claiming publicity via the Australian magazine *Nexus* is what got many of us actively interested in backing off permanent magnet rotor poles by pulses fed to opposing electromagnetic stator poles. With

the correct design we can all become energy magicians!

Harold Aspden, Sabberton Research, P.O. Box 35, Southampton SO16 7RB, England

EDITOR'S COMMENTS

What does it mean to have a motor that is over 300% efficient? This is the question that your unbelieving friends will ask you. Here is a possible answer that will amaze your friends -- they may even think you don't know what you are talking about!

Think about it this way: If I have an automobile engine that is 300% efficient, that would mean that once I get it started and running, the motor will cease to draw gasoline from the gas tank. Instead the motor will create gasoline and pump it back into the gas tank. Now instead of going to the service station to fill up my gas tank, I would want to empty out my full tank so I would have room for more!

A truly over-unity electric motor connected to a battery would take energy from the battery to get started. During over-unity (over 100% efficiency) operation, the motor would perform its power function and charge the battery! This is such an unexpected consequence that there will be few believers. Obviously, this type of electric motor action must be demonstrated and tested by independent engineers or scientists before the world will be convinced that true over-unity devices can even exist. Stay tuned for further developments.

APPROVAL VOTE FOR THE BYLAWS OF THE INE

By Patrick Bailey, INE President

The INE Bylaws have been completed and are being included with this issue of NEN for your approval. Please use the enclosed form and promptly mail in your approval vote or suggested revisions. (see back page of the Bylaws for form.) The Bylaws need a majority of all the member's votes to be approved. Your vote is very important!

Approval of the Bylaws requires your vote. Members of INE receive the *New Energy News*, and it is you who direct the INE and approve all of its

actions. Please, fill out, sign and return the enclosed voting form in the addressed envelope as soon as possible.

As the INE is a registered non-profit organization, with the member's approval of the Bylaws, funding can be raised by the INE through grants and other U.S. and international non-profit organizations.

All INE members should know that a great deal of care and dedication has gone into the creation of these Bylaws, and that the best portions of several Bylaws of other organizations within various technical fields were used to construct the INE Bylaws. Special thanks should be given to Toby Grotz and Hal Fox for compiling and cross-checking all of the various portions of the documents used. INE will send Robyn a bouquet of flowers for her accurate word-processing, when the Bylaws are approved.

The current Officers, Members of the Board of Directors, the various INE Committees, and the Directors who are chairing each Committee are listed below. These positions were elected by vote and filled last year at the ISNE Conference in Denver.

It has taken some time and a lot of effort to get the INE to a "squeaky-clean" legal position to receive large amounts of funding through grants, solicitations, and benefactors. Then INE will be able to fund the projects that we would all like to see researched and commercialized. Several sources of funds have already been identified, and they require a copy of the Bylaws before they will commit serious funds for research, development, or device demonstration. **Your vote to approve these Bylaws will enable such funding to become a reality sooner, instead of just another fantasy.**

Read the Bylaws and send in your voting form today!

Officers, Directors, and Committees
Elected by Vote at the ISNE, Denver, 1994:

OFFICERS

President	Patrick Bailey
Vice President	Ricky Butterfass
Vice President	Ken MacNeill
Sec/Treasurer	Hal Fox

COMMITTEES and CHAIRS

1. Financial [Obtains INE Funding]
Patrick Bailey
2. Conference Organization and Administration
Ken MacNeill
3. Marketing [NEN, Membership, Education, Political]
Brian O'Leary
4. Technical Advisory
Don Kelly
5. Proposal and Grants
6. International
Andy Michrowski

BOARD MEMBERS and COMMITTEES

Chairman of the Board: Patrick Bailey

Active Board Members and Their Committees

Wolfram Bahmann	6
Patrick Bailey	1,2
Ricky Butterfass	3,5
Hal Fox	3,1
Don Kelly	4,5
Ken MacNeill	2,4
Jeanne Manning	3,6
Andrew Michrowski	6
Brian O'Leary	3,6
Ede Riesenhuber	2,6
Greg Wasleski	3,4
Charles Yost	3,4

Four Board Members have resigned or become unqualified: Christine Ferguson, Janet Meisinger, Beverly Rubic, and Bob Siblingud

ON FREE-ENERGY DEVELOPMENTS, THE IANS AND THE INE

Excerpt from Brian O'Leary's Workshop Presentation at the San Francisco Whole Life Expo
Sunday, 22 October 1995
From Dr. Patrick Bailey

I was fortunate to be able to go this Expo and bought a copy of the two audiotapes of Brian's really wonderful workshop presentation. I thought that the INE Members would like to hear some of the things that he had to say in that presentation. Here is a short summary of his talk:

"It takes time to investigate something and to see what the truth really is. The resistance to any new idea is proportional to the square of its importance (Bertrand Russell). Somebody has to be the pioneer and build the bridge! All that we would need is a moderately funded effort! What's going on now? Some 'free-energy' and 'over-unity' experiments have been seen and are repeatable. We have the theoretical underpinning. And right now, the concept of 'free-energy' has a poorer credibility than that of UFOs! America has tripled its oil consumption in the last 20 years. Estimates are that we have 20 to maybe 40 years of oil left! 'Free-energy' is so abundant that it could be used to provide a clean environment for the entire world! It could also be abused, so it needs to be developed properly! Several devices have been seen that produce 'free-energy' effects. No commercial models are available. Why not? We need a moderately funded R&D effort, maybe at about \$10 M to \$100 M per year: that represents only about 1/100th of 1% of the Federal Budget! My proposal is to start such an R&D laboratory and to bring the proper people in, and with a community effort, to develop these new technologies! The US has been historically hostile to the receipt of these new technologies. Several researchers are developing various devices. We need to work together on this!

"I (Brian O'Leary) am a Board Member and one of the founders of the International Association of New Science (IANS). The Institute of New Energy (INE) is a spin-off organization of the IANS. There has been a bit of a rift within the INE that during the past two international conferences the organizers have not allowed 'New Age' concepts, such as the effects of consciousness on mechanical devices, to be included in their meetings. So, the INE has become a new professional technical society devoted to the study of just these mechanical devices and their 'free-energy' effects. That should continue. The IANS will continue to research the effects of other influences within the energy conversion and other fields. New sciences are real and they can be studied by using the old-sciences investigative methods. 'Free-energy' is a very real prospect in the near future! When we work together in bonded dedicated groups, anything is possible."

[Dr. Brian O'Leary, a former astronaut, has recently moved to Hawaii. In his extensive travels, speaking and authoring projects, he has missed many *NEW*

issues. Brian will be pleased that considerable progress is being made toward commercialization. Brian and this editor have a friendly difference of opinion on funding resources. Brian likes Federal dollars and I like private funding. Ed.]

LEST WE FORGET!

DID YOU KNOW ...

- ◆ that Albert Einstein was considered retarded, Isaac Newton was thought to be a slow learner, Joseph Priestly (the discoverer of oxygen) never took a science course, and Louis Pasteur got a C in chemistry.
- ◆ that in 1876 when G.G. Hubbard learned of his future son-in-law's invention, he called it "only a toy." This daughter was engaged to a young man named Alexander Graham Bell.
- ◆ that in 1969 the *New York Times* published an apology for once printing derisive comments about an inventor's theory. Robert Goddard was on the receiving end of the *Times'* criticism of his contention that rockets could operate in outer space. The apology was printed the day after Apollo 11 left earth orbit for the moon.
- ◆ that in the early 1940's a GE engineer was charged with a task of utmost importance to the war effort: develop a cheap substitute for rubber that could be used to produce tires, gas masks, and a whole host of military gear. James Wright tackled the task diligently -- and wound up inventing Silly Putty. Good thing he didn't work on the artificial heart.
- ◆ that neither Wilber nor Orville Wright graduated from high school. However, they were both avid readers.
- ◆ that Charles Goodyear began his experiments on rubber in a debtors' prison. He was there so often that he referred to it as his "hotel."
- ◆ that Darryl F. Zanuck of 20th Century Fox thought TV was just a passing fancy. In 1946 he said, "Video won't be able to hold any market after the

first six months. People will soon get tired of staring at a plywood box every night."

◆ that in the fall of 1989 the Cold Fusion panel of the Energy Research Advisory Board to the DOE concluded, "The panel recommends against special funding for the investigation of phenomena attributed to cold fusion."

Fusion Briefings

THE 102 FACTOR AND ROOM TEMPERATURE SUPERCONDUCTIVITY

By Dr. Harold Aspden

On p. 13 of *NEN*, October 1995, Dr. Samuel P. Faile drew attention to the recent Russian discovery of a superconductor effective at 371°K, very nearly the boiling point of water. Its molecular composition is $\text{YBa}_2\text{Cu}_3\text{Se}_7$, and readers may wonder whether this fits my supergraviton theory referred to on pp. 2 and 3 of the same *NEN* issue.

The theory holds up very well. Note that Se (selenium) has replaced the more familiar oxygen component of the warm superconductor molecule. Selenium has a boiling point lower than the melting point of Y (yttrium), Ba (barium) or Cu (copper) and this implies a selection among the adsorbed Se isotopes which might nucleate the body of the superconductor. The main isotope is ^{80}Se (49% of the composition) and a cluster of 14 ^{80}Se has a group mass of 1120 nucleons or 11(101.82). Y is a single isotope species and Ba is 72% ^{138}Ba . Copper is 69% ^{63}Cu and 31% ^{65}Cu . The addition of Y, Ba and Cu in the right proportions doping the ^{80}Se superconductive domains can develop two molecular sub-groups, one comprising the three atoms ^{138}Ba , ^{89}Y , and ^{80}Se which accounts for 307 nucleons, and one comprising five atoms ^{138}Ba , ^{80}Se , ^{65}Cu , and two ^{63}Cu , which accounts for 409 nucleons.

One can then see that three 102 amu supergravitons are involved with the first group and four with the second, and that two of each group type formed by blending with the 14 ^{80}Se group will have the

composition of two molecules formulated as $\text{YBa}_2\text{Cu}_3\text{Se}_7$. The overall mass of this molecule will be that of 1116 nucleons or 11(101.45) but the 371°K superconductivity is reported in 'variations' of this compound and one wonders whether ^{79}Se is involved in the sub-group compositions to give 306 and 408 nucleon forms, both being more closely resonant with the 102 supergraviton, while the 14 ^{80}Se groups having the 101.82 resonance exist as separate domain formations.

I believe my theory holds its ground in explaining the basis of warm superconductivity for this latest 371 K discovery.

Since writing "Cold Fusion is a Live Issue" (*NEN*, p. 2, October 1995), I had occasion to look up some of my writings in *Speculations in Science and Technology* where I first published the 102 supergraviton proposition and argued its connection with cold fusion (vol. 12, pp. 179-186; 1989) after filing my U.K. patent No. 2,231,195. It was in this same periodical (vol. 13, no 4 issue; 1990) that a sequence of nine contributions on the new energy theme appeared, including articles by Hal Puthoff, Don Kelly, Moray King and Bruce DePalma, for which I had accepted the role as Guest Editor. Browsing back to vol. 3 on p. 127, I noticed an article by Solomon Goldfein on biological superconductors, which had escaped my past attention; it having been filed away several years before the excitement of warm superconductor era. It contained an interesting comment referring to an earlier paper by Alfred A. Wolf and Ernest H. Halpern, (*Proc. IEEE*, pp. 357-359, 1976), which was that, in theory, cholesterol molecules might form locating channels in which they might combine with Na^+ to form a structure superconductive at 350°K. That was speculation but what was not speculation were the experimental facts reported in that *Proc. IEEE* paper, where it was disclosed that six different bile salts were superconductive, sodium dioxycholate having the highest transition temperature of 277°K.

Here was room temperature superconductivity of record in 1976, ten years before the discovery of the 77°K warm superconductor was announced! Moreover, the action was in substances in living matter in which Na is believed to experience cold fusion by transformation into Mg, the subject discussed by Goldfein!

I had, therefore, to check my 102 theory, first by adding Na⁺ to a cholesterol molecule in substitution for H⁺, which adds 22 amu to cholesterol's listed molecular mass of 386.66 atomic mass units and seeing how many such molecules might be needed to assure a near-to-102 mass resonance. To my very great surprise I found that each such single unit has a mass of 408.66, which is 4 times 102.15. This is as near to the perfect resonance predicted theoretically (102.173) as I could ever have hoped for.

When I then checked the Wolf and Halpern paper at the university library, I found that before Na (sodium) substitution the formula for the 277°K superconductor sodium dioxycholate is given as C₂₄H₄₀O₂, which has mass 360.6 amu. Adding 23 for Na and removing 1 for H gives 382.6, and combinations of four such sodium dioxycholate molecules in a group structure to form an ionic conductor channel has a mass of 1530.4 amu, which is 15 times 102.03. Again the case is proved!

With such background, to be discovered - not in mainstream physics journals - but in speculative publications and engineering publications, one wonders how many other discoveries pertaining to cold fusion and the new energy theme are buried deep in the published literature not read by physicists. It is indeed curious that the U.S. Patent Office accepted the proposal by the President of the USA to confer special status on patent applications relating to superconductivity as part of the drive forward on the new energy front, but has reacted contrary to the spirit of that proposal by adopting an incredible posture of opposition on the cold fusion theme.

The developing situation will become quite hilarious in the eyes of future historians when events reveal that both warm superconductivity and cold nuclear fusion are a recognized part of the energy machine of the human body and that such facts were clearly expressed and are of published record in the 1974-1980 period in scientific papers or government reports authored by Solomon Goldfein (Material Technology Laboratory, Dept. of Army, Fort Belvoir, Virginia) and by Alfred A. Wolf and Ernest H. Halpern (David W. Taylor Naval Ship R&D Center, Annapolis, MD).

Harold Aspden

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PONS-FLEISCHMANN PATENT

ENECO Receives Notice of Intent of Patent Grant from European Patent Office on Original Pons-Fleischmann Cold Fusion Invention

Salt Lake City, Utah, October 30, 1995 -- Fred Jaeger, President of ENECO, Inc., today announced, "The European Patent Office has issued a Notice of Intent of patent grant on the original Pons-Fleischmann cold fusion patent." ENECO acquired the exclusive world-wide license rights to the Pons-Fleischmann cold fusion technology from the University of Utah in November, 1993, and has been pursuing patents in the U.S. and abroad on these technologies.

"The notice of intent of grant of the European patent is a significant milestone on ENECO's path of commercializing cold fusion devices," says Jaeger. "A significant amount of private and governmental cold fusion research continues to be aggressively pursued throughout Europe. Once the European patents issue, ENECO plans to capitalize on the economic strength of the European community through the sale of research and development licenses that will evolve into manufacturing licenses. The Pons/Fleischmann patents will be the pioneering patents in the cold fusion field."

TRIODE COLD FUSION CELL

"Briefs," *Infinite Energy*, vol 1, no 3, Jul-Aug 1995, p 42.

An announcement of a possible new direction in cold fusion electrochemical cells was received 7 August 1995:

STATEMENT

Cravens Laboratories in Cloudcroft, New Mexico, has recently run preliminary evaluation tests on a three-electrode (triode) Pons-Fleischmann type nuclear fusion cell. Evan Ragland, the inventor of the triode cell, believes the third electrode affords a

degree of control of the cell loading and fusion rate. Results of initial tests are positively encouraging and provide new insight into cell characteristics. Confirmation experiments and new exploratory experiments are planned to be conducted. The present work plan is to: 1) Confirm initial experimental results; 2) Evaluate some heretofore unobserved phenomena; 3) Conduct experiments on improved cathode embodiments; and 4) Design and test new electronic control circuits.

From: Evan Ragland Company, 6640 Ahokolo Circle, Diamondhead, MS 39525-3461.

ENGLAND'S NUCLEAR SUN IS WANING

Courtesy of Steven Roen

Staff writer, "At the going down of the nuclear sun," *The Economist*, Science & Technology section, Sept 16, 1995, pp 93-96, illus.

EDITOR'S SUMMARY

The nuclear sun, as designed by hot fusion scientists, has culminated in a 1995 joint proposal for the International Thermonuclear Experiment Reactor (ITER). The U.S., Russia, Japan, and Western Europe have subscribed to the concept, and preliminary designs of the required super-strong magnetic confinement "bottle" have been advanced. **Further development of the ITER is now dependent on governments who desire to fund big science.** The article states, "In the industrial countries little effort is going into the development of new forms of fission..."

The ITER proposes to use deuterium and tritium as fuel. Deuterium is plentiful in the world's water and tritium can be made in a reactor by hitting lithium with neutrons to split the lithium into two tritium atoms. The alternative to the ITER project is inertial confinement fusion (ICF) where laser beams are proposed to blast deuterium and tritium into fusion. Both France and the U.S. have ICF experiments costing over a billion dollars. The ITER project is designed to advance hot fusion beyond the achievements of the tokamak (huge donut-shaped reactors) as developed by U.S., Japan, and the Joint European Torus in Britain. These reactors are not large enough to produce self-sustaining fusion. The

ITER will supposedly be big enough for "ignition". But big is expensive. The proposed superconducting magnets would cost about 40% of the multi-billion dollar ITER budget.

There are budget problems ahead. In the U.S., the President's Committee on Science and Technology has recommended an increase in the fusion budget to \$645 million a year between 1995 and 2005, but will settle for \$320 million per year. Even a proposed smaller ITER will cost an estimated \$4 billion and would not be sufficient to achieve "ignition". **The proposed \$320 million annual budget has been cut to a proposed \$229 million for 1996 which would leave no funds for contribution to an international ITER. Without American dollars, the ITER will probably not be built.**

The alternative to fusion is nuclear fission. Italy has no fission power plants and none are planned. U.S. has 109 fission power plants that provide 20% of the U.S. electrical power. **[But at enormous future costs for clean up of radioactive wastes. Ed.]** The neutrons from proposed fusion plants would make the containment structure radioactive. Each plant, it is estimated, will require replacement of these structures every two years and will produce hundreds of tons of radioactive wastes with each replacement. In addition, lithium is proposed to be used to trap the neutron flux. **The result is the production of a tritium-load lithium, a combination which is considered highly dangerous as lithium can burn in air and release huge quantities of radioactive tritium.** With the huge size of the proposed ITER, an accident could release radiation equivalent to the Chernobyl accident, this article reports.

The article concludes with, "There is no doubt that the world's energy needs are increasing rapidly. Eventually, fossil fuels will become harder to find, and their environmental cost may become unbearable sooner. However, fusion is not the answer to these linked problems -- at least not in the short term. Billed as a clean, safe solution to the world's energy problems, fusion is not necessarily much cleaner or safer than fission, and it is a lot less practical."

Editor's Conclusions: What *The Economist* has yet to learn is that the new science of cold fusion or

"new hydrogen energy" is now far more developed than the hot-fusion devices will ever be. **There is now no reason for any government to spend billions of dollars on hot fusion research. Except for military uses, there is no reason for any government to finance "new hydrogen energy" research. The progress is sufficient to attract corporate research and development funds.**

NEW COLD FUSION PATENTS

JP 95 120,574; "Apparatus for generating heat by occluding heavy hydrogen in hydrogen-occluding metal;" Takayuki Takeuchi (Matsushita Electric Ind. Co. Ltd.); 12 May 1995, 26 Oct. 1993. The apparatus contains a means to detect the quantity of heavy hydrogen occluded in the hydrogen-occluding metal. Optionally, the apparatus may contain a means to detect ≥ 1 of radiation and nonradioactive particles generated from the surface of the metal. The heat-generating reaction can be carried out stably.

JP 95 113,885; "Cold nuclear fusion;" Akira Oota, 02 May 1995, 15 Oct. 1993. Cold fusion comprises the steps of (1) nonuniform occlusion of heavy hydrogen in a material made of different elements and (2) collision on deuterons with the material at ordinary temperature. The different elements are made of ≤ 1 μm particles. AC current is applied to the material. A temperature difference is established at 2 ends of the material. Cold fusion can be generated easily with the production of a large amount of heat.

JP 95 146,387; "Generation of excess heat by AC electrolysis of heavy water;" Noboru Koyama, Hiroshi Hirasawa, Keiji Kunimatsu (Tekunoba Kk); 06 June 1995, 25 Nov. 1993. In a method using an H isotope-occluding metal as the cathode and occluding the D generated from the electrolysis of heavy water at the cathode to generate excess heat, a sine-wave alternating current having a fixed amplitude is superimposed on the direct current applied during electrolysis so that the D occlusion ratio (D/Pd) is continuously varied. Excess heat can be generated in a stable manner over a long time.

WO 95 12,883; "Glow discharge apparatus and methods providing prerequisites and testing for nuclear reactions;" John Marshall (ENECO Inc.); 11 May 1995; 01 Nov 1993. A method and apparatus are given for experimenting and testing cold fusion or other solid state nuclear reaction processes by means of achieving high pressures of solubilized light fusion elements in solid metal lattices from the gas phase. The apparatus uses an anode and cathode positioned in a chamber receptive of the fusion element gases to produce controlled conditions compatible with postulated cold fusion for laboratory and reactor purposes. Two electrode embodiments are disclosed for use in a glow discharge mode of operation. The electrodes are thoroughly scrubbed of impurities by heating and sputtering prior to experimenting on cold fusion processes. The results of cold fusion experimentation are then monitored and controlled.

Space Energy

ADAMS-CATHIE THEORY = NEW MAGNETS

Robert Adams (Australia), "Super Space Magnetic Power Source Discovery," *Nexus*, vol 2, no 26, June-July 1995, p 55-56.

In conjunction with Bruce Cathie, Robert Adams reported having found an engineering method to increase the energy potential fourfold. Adams has said in the past that the combining of Bruce Cathie's harmonic universal field theory with the Adams magnetic technology could lead to their achieving a design for electric motor and generator that was highly efficient. Since there is no outside electromagnetic force applied to cause the resulting massive increase of energy, it seems that the change has to be coming directly from space energy.

This discovery is related to the engineering of magnets into forming four poles, which causes vortexes that quadruple the energy of the magnet. "A rectangular or cube magnet, when engineered

into the Adams technology, becomes a unit consisting of four twin poles, each face containing a north and a south pole, separated by a zero vortex in the center of each of the four twin poles, and all displaying similar energies."

Such a magnet was tested (approximately a three-quarters of an inch cube, weighing only 60 grams) capable of holding a weight of beyond 20 kilograms in midair (333.3 times its own weight). [Probably one of the magnets supplied by Takahashi. Ed.]

ETHER AND EINSTEIN: A REVIEW

By R. Bruce Cunningham

A REVIEW: "Ether and the Theory of Relativity," by Albert Einstein, from the book, Sidelights on Relativity, reprinted by Dover Press, New York, New York, 1983, \$3.95 ISBN 0486-224511-X

Einstein gave an address entitled, "Ether and the Theory of Relativity," 1 May 1920, at the University of Leyden. He introduced the postulates for two basic ether theories: 1. In reference to Newton's 'action at a distance,' and 'in the properties of light.' Here, Einstein explained as to light:

"It ... seemed to be a necessary consequence of the fact that light is capable of polarization that this medium, the ether, must be of the nature of a solid body, because transverse waves are not possible in a fluid, but only in a solid."

Einstein gave a brief history of ether theories from Newton's time to Lorentz. Einstein discarded Hertz's ether as an outdated mechanical model when he said:

"There is no fundamental difference between Hertz's ether and ponderable matter."

Einstein's historical narrative indicates the older problem-prone mechanical--ether models were giving way to electromagnetic ether models. Einstein, however, found an ether-problem solver in H.A. Lorentz. Einstein said, "Lorentz...brought theory into harmony with experience by means of a wonderful simplification of theoretical principles."

Einstein outlined the fundamental energy states of Lorentz's ether and relativised them into the special

theory of relativity. The energy states are: motionless, massless, timeless, and inert. Later in the address he added homogenous and isotropic.

Einstein's motive for relativising Lorentz's ether seems clear enough -- he had a critical problem in physics -- the special theory could not account for the propagation of light without the solid-bodied ether.

Addressing the ether problem in the general theory, Einstein said,

"if the modern physicist does not believe that he may accept.. action at a distance, he comes back once more, if he follows Mach, to the ether, which has to serve as medium for the effects of inertia . But this conception of the ether to which we are led by Mach's way of thinking differs essentially from the ether as conceived by Newton, by Fresnel, and by Lorentz. Mach's ether not only *conditions* the behavior of inert masses, but *is also conditioned* in its state by them.

Mach's idea finds its full development in the ether of the general theory of relativity."

Einstein outlined three cases where he compared the states of Mach's ether with the states of Newton's ether and Lorentz's ether. Here he carefully pointed out the differences between these theories. In the end, however, Einstein stated:

"The ether of the general theory of relativity is transmuted conceptually into the ether of Lorentz if we substitute constants for the functions of space which describe the former, disregarding the causes which condition its state."

Again Einstein's motive is clear. Once a dynamic gravitational ether is established in the general theory, the general theory of relativity could not account for the propagation of gravitational influences without a stationary ether to convey them. Since Mach's ether theory was included in the general theory's dynamic gravitational ether. Einstein transmuted the combined gravitational ether theories into Lorentz's relativised ether (stationary ether) in the special theory. With this transmutation Einstein could account for the conveyance of light and gravitational influences in

what he called 'New ether.' The final paragraph of the address is Einstein's demonstration of the phenomenologically combined ether theories as the 'new ether.'

One of the often misquoted and misunderstood statements in theoretical physics is attributed to this address. The problem stems from Einstein's statement:

"The ether does not exist at all."

This statement, made clearly for argumentative purposes within the address, is often excerpted as the heart of the intention of the address and used to show Einstein did not postulate an ether. Einstein's following (next) paragraph puts clear meaning to the statement, when he said:

"More careful reflection teaches us, however, that the special theory of relativity does not compel us to deny ether. We may assume the existence of an ether; only we must give up ascribing a definite state of motion to it, i.e. we must by abstraction take from it the last mechanical characteristic which Lorentz had still left it."

Einstein referred to the following ethers: 'Ether,' 'Newton's ether,' 'Newtonian ether,' 'Quasi-rigid luminiferous ether,' 'Quasi-rigid ether,' 'Stationary luminiferous ether,' 'Luminiferous ether,' 'Hertz's ether,' 'Lorentz's ether,' 'Lorentzian ether,' 'Gravitational ether,' 'Mach's ether,' 'The ether,' and 'New ether.'

The confusion in physics regarding ether theory may stem from the transmutation of ether theories in this address. Another possible source of confusion may simply be the plethora of ether theories listed above and those theories commonly found elsewhere. The conclusion drawn from this address is Einstein's firm theoretical postulate for an ether theory.

R. Bruce Cunningham, Ether theorist
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SUPER-THICK, SUPER-FLUID ETHER

Courtesy of Sam Faile

László Gazdag (Janus Pannonius Univ., Pécs, Hungary), Beyond the Theory of Relativity, Szenci Molnár Literary and Scientific Society, Hungary, c1995, in Hungarian.

EDITOR'S SUMMARY

The first chapter of the English translation includes the following: "The superfluid ether is not static. It has different impused components (bosons). It is even a superthick (super compact) medium. Look at the Planck equation."

In describing how dense the ether is, Gazdag uses the Max Planck equation (c1910) which Max Planck formulated to relate the electromagnetic energy distribution of the vacuum. This equation has a term which is ignored as being too small. However, Gazdag stresses the fact that if the ether supports the conduction of very high frequency radiation (up to 10^{44} Hz) then this term can become enormously large -- up to 10^{93} kilogram per cubic meter of mass converted to energy by Einstein's formula of $E=mc^2$! The author notes that matter, which is much less dense, "floats" in this sea of etheric energy much as a deep-ocean fish swims in sea water having enormous pressures.

It is important to note that this figure of etheric energy is consistent with Hal Puthoff's similar calculations of the energy density of the vacuum zero-point energy. [H.E. Puthoff, "The Energetic Vacuum: Implications for Energy Research," *Speculations in Sci. & Tech.*, vol 13, no 3, p 247-257.]

See also the following article:

László Gazdag (Janus Pannonius Univ, Pécs, Hungary), "Einstein's second postulate," *Speculations in Science and Technology*, Vol 18, pp 150-152, 1995, 1 fig.

Solid-State Space-Energy Devices

MRA MEASUREMENT VERIFICATION

Ed Everett, Teledyne Ryan Aeronautical, Engineering Environmental Lab., San Diego, CA, 26 Sept. 1995.

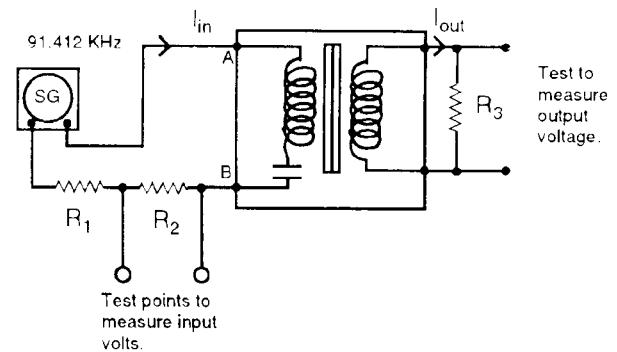
One (1) MRA S/N 95-3 was setup for demonstration and measurement verification on 25 September 1995. The demonstration and measurements were performed at the Teledyne Ryan Aeronautical (TRA) Engineering Environmental Lab., San Diego, CA.

The demonstration was conducted by Robert Taylor and the measurement verification was performed by Ed Everett of Teledyne Ryan Aeronautical. The MRA demonstration and measurement verification was conducted according to customer direction. No written plan/guideline was provided. A chronological record of the event was maintained and is identified as TR 3715. The test log was used as the basis of this report and a copy of this log is presented as Attachment A. A copy of the equipment list is also included as Attachment B. A short discussion of the measurements made is provided below.

DISCUSSION

The customer set up the MRA as shown in Fig. 1. Using his own signal generator, power amplifier and measurement meter, the customer demonstrated the MRA to his visitors. After his demonstration and discussion, the MRA circuit was connected to a TRA RF signal generator. The following conditions/assumptions apply: a) The MRA was treated as a Black Box with an input (A&B) and an output (D&E). b) The input circuit was considered a series circuit, i.e. the current flow R1 & R2 represents the total input current. c) No examination of the MRA circuit was made other than a cursory visual inspection of the exterior.

Using a TRA oscilloscope (Tektronix model 2205), the following measurements were made:



1. The signal generator was set to 91.412 KHz per the customer, and the output was turned up to maximum level.
2. The input to the MRA (points A to B) was measured and found to be 0.085 Volts peak (Vpk), or 0.060 Volts RMS (Vrms).
3. The voltage across R1 & R2 (B to C) was measured next and found to be 0.125 Vpk (0.088 Vrms).
4. The input current was then calculated per the customer as the voltage (rms) across R1 & R2 divided by the resistance of R1 + R2. This yields 0.3 μ amps.
5. The output voltage across R3 (D to E) was measured and found to be 0.015 Vpk (0.0106 Vrms).
6. The output current through R3 was calculated per the customer as the voltage (rms) across R3 divided by the resistance of R3. This yields 10.6 μ amps.
7. The customer defines the MRA gain as the output voltage (rms) D to E times the output current through R3 divided by the input voltage (rms) A to B times the input current through R1 & R2. This yields $(0.0106 \times 20.6 \times 10^{-6}) / (0.060 \times 0.3 \times 10^{-6}) = 6.2$
8. The customer removed the input to the MRA at points A & B. The output across R3 was measured again and was found to be approximately 1-2 millivolts of noise.

The frequency of all voltages measured was 91.412 KHz except for step 8, which was random noise.

Prepared by Ed Everett, Engineering Environmental Lab, TRA

EXCITATION EXPERIMENTS

Reports on Sam Faile's Braided Cord Experiments
By Nick Reiter, 3:30 pm, 15 Oct 1995

For this experiment, we use our home-built flyback plasma globe on a stand about 0.74 meter from the test array. This device is a little less powerful than a "Radio Shack" plasma globe, and seems to operate at about 15 to 20 KHz.

The 2 conductor subdivided Caduseus Double Whirly 20 is connected with IN914 diodes and a 1.0 µF capacitor. The plasma globe (P.G.) is turned on. The current output of the array, under this excitation, rises to about 2.35 µA.

We see that an 18" x 18" piece of aluminum foil placed between the P.G. and the array attenuates the signal down to .30 µA. This is surprising, and almost suggests that the exciting radiation from the P.G. is nearly line of sight (?).

Next, we make a small hole in the center of the foil, and enlarge it until we finally see a rise in the current from the array. (The foil is snipped out in increments.)

Finally, at a hole diameter of about 14 to 16 cm, we see current rise to about .97 µA. This crude experiment suggests that, if transverse, we are dealing with radiation of about 15 cm wavelength. However, a little low frequency plasma bulb is unlikely to generate GHz E-M radiation. Is another wave-form at work?

Next, we use the IX Caduseus 40 Coaxial braid with IN914 diodes (same P.G. position). We wish to examine how different grounding modes affect the excited output:

ungrounded --	1.265 V	.12 µA
excited --	7.75 V	3.78 µA
shield only ground --	4.288 V	.41 µA
excited --	4.450 V	3.48 µA
shield & conductor ground --	4.667 V	.45 µA
excited --	4.841 V	4.03 µA

This suggests that grounding conditions may affect or control Voc more than Jsc. Clearly, the

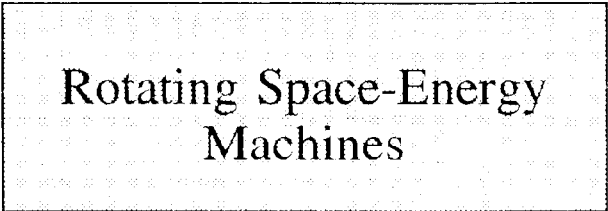
ungrounded array is capable of "running-away" to higher Voc's than in a grounded state.

SUPEREXCITATION

I connected the 2X Caduseus 40 Coaxial braid with IN914 diodes to check its characteristics under excitation.

Ground shield only --	4.091 V	.40 µA
excited --	4.635 V	5.34 µA

At this point I placed my hand on the P.G. ball, and drew the high frequency arc to myself. I observed that the Voc at the Kiethley went off-scale! I set the range up, and tried it again. The output of the array was now bouncing between 75 and 92 volts! (46 mW?) I switched over to current and repeated the condition. We now read 530 µA. Reich would have loved this... [W. Reich of Orgone fame. Ed.]



TAKAHASHI ANNOUNCEMENT

Yasunori Takahashi will formally announce his over unity motor/generator at a technical symposium (lecture) in Lucern, Switzerland, on November 13, 1995. He plans to do the same in London, and perhaps in the U.S. early next year, reports his London representative, Takeo Sawai.

TESTS ON DEPALMA N-MACHINE

Results of tests on Bruce DePalma's Prototype Space Power Generator are available. These tests were done in December 1994 (a homopolar generator) and January 1995 (a quadropole generator) by Leyland Consultants, Ltd., of Auckland, New Zealand. The 60 page set of test results and invention description are available for \$7 in the U.S. & Canada, and \$9 foreign. U.S. funds only. Write

to *NEN*, P.O. Box 58639, Salt Lake City, UT 84158 for copies of these tests.

NOTES ON SWISS ML-CONVERTER

By Moray King, in response to a letter by Don Kelly

Thanks so much for sharing your progress on the Swiss ML Converter project as well as your latest *Space Energy Journal* (quite inspiring!). Because the ML Converter contains many "red herrings" designed to mislead engineers, I have not focused a lot of effort on that project. (After all, it's hard enough to explain paradigm violating anomalies when the inventor is completely honest and forthcoming.) However the following hypothesis does come to mind:

What if every abrupt, electrostatic discharge produces anomalously excessive energy? Pappas [1] has originally proposed this, and the work of Shoulders [2] certainly shows an example of it whenever EV's [Electra Validium - strong electrons] are launched. Now what if submicroscopic plasmoids like EV's are always created in any electrostatic discharge? These would be considerably smaller than Shoulder's EV's and even more difficult to individually detect. Yet they would actually be the source of anomalous energy in any electrostatic discharge thus fulfilling Pappas' hypothesis. Hyde [3] likewise believed there is excessive energy contained in electrostatic pulses. The problem is to capture the energy. Puthoff [4] has mentioned that it was difficult to scale up the EV phenomena because the over unity efficiency drops as they increase the power into the individual EV's. What if we go the other way? Work with a large number of (the hypothesized) submicroscopic EV's generated from a plethora of electrostatic pulses. Each individual pulse would be very weak, yet if we could capture the excess power of each via an appropriate rectification circuit, the sum could integrate to useful power. This might be the basis of Hyde's invention as well as the Swiss ML converter. It's easy to generate weak, high voltage electrostatic pulses. The trick is to efficiently absorb the resulting energy.

Hyde was able to successfully convert weak high voltage pulses to DC via his current multiplication circuit (figure 6 of his patent [5]). The circuit was

developed empirically with cheap off-the-shelf capacitors and diodes. Normally these components would fail when subjected to KV pulses, but because each pulse is so weak, the circuit is able to withstand them and efficiently multiply the current. This allows a final rectification onto storage capacitors. Hyde reported the use of nearly a thousand components (small capacitors and diodes) in his 20 KW device.

To my knowledge, most of the replication attempts on Hyde's invention focused on the spinning segmented rotors. I do not know of anyone who has replicated his current multiplication circuit. I believe that circuit is the essence of Hyde's invention, and it can be used to absorb anomalous energy from weak electrostatic pulses regardless of how they are generated.

If Hyde's simple current multiplication circuit can be successfully replicated, then more stages could be added to create a practical energy machine from any source of electrostatic discharges including the rotors of the Swiss ML Converter.

References:

- [1] P.T. Pappas, "Energy Creation in Electrical Sparks and Discharges: Theory and Direct Experimental Evidence," *Proc. 26th IECEC* vol. 4, pp.416-423, 1991.
- [2] K.R. Shoulders, "Energy Conversion Using High Charge Density," U.S. Patent 5,018,180 (1991).
- [3] W.W. Hyde, "Electrostatic Energy Field Power Generating System," U.S. Patent 4,897,592 (1990).
- [4] H.E. Puthoff, Discussion at the 2nd International Symposium on New Energy, 1994.
- [5] M.B. King, "Fundamentals of a Zero-Point Energy Technology," *Proc. 1st International Symposium on New Energy*, 1993, pp. 201-217, contains an analysis of Hyde's current multiplication circuit.

[The formation, launching, guiding and energy extraction from various sizes of EVs is a complex, multi-parameter problem. Expect further clarification as work in progress is reported in 1996. Unfortunately there are very few persons in the scientific community working on Kenneth Shoulders' EVs.

Fortunately, Ken Shoulders and his son, Steve, are working full time on EV development. Ed.]

Electric Vehicles

MINERS AND DIESEL DUST

Mike Gorrell, "Latest Threat to Miners: Diesel Dust," *Salt Lake Tribune*, Oct 10, 1995.

EDITOR'S SUMMARY & COMMENTS

Modern underground coal mines use diesel-powered equipment and the miners are exposed to breathing the exhaust from this machinery. An alternative solution is being considered by the industry in a workshop sponsored by the Mine Safety and Health Administration (MSHA). Not proven, but suspected is that the diesel exhaust can cause or worsen problems of lung irritation and may lead to cancer. In consideration of air quality control, the MSHA is proposing studies to determine the danger of the exposure to diesel exhaust.

Now that cold fusion is being commercialized, this newsletter would like to suggest an alternative use of the study funds. The heat generated by a cold fusion reactor, such as a Patterson Power Cell™ can be used with selected high-molecular weight fluids to produce a closed-cycle Sterling (or other type) engine which could be used to power various types of equipment. There are no measurable contaminants from these light-water cold fusion reactors.

*The nuclear reactions that are catalyzed on or near the surface of the metal lattice in the reactor, are one million times more energetic (in terms of power per pound) than burning diesel fuel. Such unit could be designed to operate underground ventilation equipment without the thousands of feet of electrical cables now required. We strongly suggest that the MSHA look into the application of this new technology.

NEW BATTERY DEVELOPMENTS

Courtesy of David S. Alexander

Mark A. Gottschalk (Western Technical Editor), "Electrical-vehicle batteries race toward production," *Design News*, July 24, 1995, pp 23-24, illus.

EDITOR'S SUMMARY

The passage of clean-air initiatives in the states of California, New York, and Massachusetts require that 2% of vehicles sold to be zero-emission by 1998. The problem: the vehicle technology is ready, but the batteries lag. An estimated \$5 billion has been spent on battery development over the past few decades. The United States Advanced Battery Consortium (USABC) is a coalition of DOE, EPRI, and the big three automakers from Detroit. The USABC is working on at least a dozen different types of batteries. Here is a summary of the leading contenders:

Lead-acid (tradition auto batteries) **too heavy.**

Ni-Cad **expensive and toxic.**

New Lead-acid: **lighter, 30% better, Energy density 42 Wh/kg, Power Density 200 W/kg.**

Nickel hydride (Ovonic) **80 Wh/kg, 220 W/kg, long-lasting but expensive.**

Sodium-Sulfur and Sodium Nickel Chloride **85 Wh/kg, 80 W/kg but work at high temperatures (about 300°C).**

Zinc-air **142 Wh/kg but have to change electrolyte to recharge.**

The biggest problem is cost. It takes a lot of batteries to propel an automobile for 100 miles. Not pointed out in the article is the great advantage an electric vehicle would have if it included an on-board 24-hr/day battery charger. Our calculations show that a 1,000 watt on-board battery charger would reduce the weight (and cost) of batteries dramatically for the "around-town, stop-and-go" driver. A 5,000 watt on-board unit with some battery power for up-hill driving could provide a compact-size electric vehicle with continuous operation on average street and freeway driving.

UNLEADED POISON?

Catherine Simons (*Nexus* writer), "The Lies of Unleaded Petrol," *Nexus*, vol 2, no 27, Aug-Sep 1995, p 19-20.

SUMMARY

This is the third pair of articles in a series in *Nexus* magazine about the dangers of unleaded gasoline and catalytic converters.

"Why was all the fuss made about one toxic substance -- lead -- in our petrol, when the substances that have replaced it -- benzene, other aromatics and olefins -- appear to be more toxic?" A lot more about this subject is being discussed abroad than in the U.S.

Benzene is a well-known carcinogen, but in large cities and near busy airports the air shows high levels of it. In Sydney, it peaked at 12 parts per billion (ppb) in the summer, and 25 ppb in the winter. Some of this comes directly from the 2-3% benzene in unleaded gas, but more of it is a byproduct of the combustion of aromatics, which comprise 20-40% of unleaded fuel.

When it became well known that the benzene was a problem, several studies on emissions were done to measure different hydrocarbon levels in common exhaust, these include benzene, xylenes (3 species), toluene, and the highly toxic 1,3-butadiene.

In theory, a catalytic converter is supposed to convert 90% of the unburnt part of the fuel and turn it into a safer substance. In practice, it is a different story. It takes 10-15 minutes for the converter to warm up before it works, and after the first 3 years they decrease in efficiency until they cease to work at 40,000 to 50,000 km. At three years, its efficiency is only 60%. But even that 60% is unlikely to include benzene, which is a stable aromatic material and probably one of the most apt to escape.

Newer vehicles also tend to emit hydrogen sulphide (smelling like rotten eggs), which has been proven to be a highly toxic substance able to attach itself to hemoglobin and block oxygen absorption (like carbon monoxide).

But with all the fear of lead pollution, which has been studied around the world, this article claims that no link has been made to specifically correlate lead in petrol with lead in the blood, supposedly because lead in petrol has a lower bioavailability compared with, for instance, lead in paint in old homes.

Remedies? In a letter which was included in the article, Douglas Wragg, an experienced Consulting Engineer for the Road Transport office in Sussex, had these comments: "...With lead fuel, although it was by no means ideal, at least we knew where it was going. Now, with the emission gases being lighter, they may well be collecting but at a higher point off the ground, and it may be years before we see what the results of this will be."

"...The informed thinking for the future is: 1) Lean-burn technology; 2) a lean-burn catalyst. This is very different from the present idea, in that it seeks to remove oxygen from an oxygen-rich environment, so that the nitrogen will once again emerge from the exhaust pipe as nitrogen--without the oxides [produced when nitrogen oxidizes at over 2,500°C.]; 3) The use of special upper-cylinder lubricants. These are already available..."

Mr. Wragg berates the idea of using electric cars because, although nearly pollution-free, the power consumed to make the batteries is considerable, the power-to-weight factor is unacceptable, large amounts of power-station fuel are consumed to provide charging, and lastly, lead-acid batteries are difficult to dispose of at the end of service. He does not consider current advanced battery research.

Wragg considers a steam driven car to be a more plausible alternative. "It has every possible advantage (and none of the disadvantages cited above): maximum power and torque at standstill, recycled exhaust and zero-emissions." The engine would be a simple three cylinder, two-stroke, with very few parts which enhances the reliability and performance. "The heat source: a hydrogen catalyst, providing motive power within 10 seconds of starting." This idea requires much development, also. [Could use cold fusion reactors as a heat source. Ed.]

The companion article is by Dr. Hans D. Nieper, of the Dept. of Medicine, Paracelsus Silbersee Hospital, Hannover, Germany, entitled "Nerve Gas

from Catalytic Converters." Since 1993 he has found constantly increased hemoglobin levels in many patients, and an increased leucocyte count on the average. This is normal adaptation of the blood formation to oxygen deficiency. His reason for this change is "Practically, only the above mentioned toxic gases from the catalytic cars come into consideration--no alternative source is in sight." An increased susceptibility to infections and irritations of the bronchial passages was also observed in all patients.

Another factor was a decrease in urea levels in the blood. Urea metabolism is vital to regulating other parts of the metabolic processes. Low urea levels put the patient at risk in the long run, the frequency of cancer increases, and the cell membranes and gene systems tend to show instability. This factor is not conducive to a healthy organism.

Dr. Nieper also warns that catalytic converters must be removed as soon as possible, and gasoline needs to be formulated without MTBE (methyl-tertiary-butyl ether), and with as little benzene as possible. He also suggests the lean-burn method, and the use of high-energy ignitions or mainly non-ohmic power quality (the so-called plasma ignition). Dr. Nieper advocates buying only diesel fueled cars, and deems battery-powered cars insignificant due to "physics principles." He envisions a car driven by power generated by converted vacuum-field energy in a car using only water, with maybe a low addition of gasoline, diesel or hydrogen.

As a preventative measure until the vehicles can be rendered less damaging, Dr. Nieper recommends supplements that are available containing a mixture of potassium-magnesium aspartate together with a urea solution which improves the supply of high-energy phosphates in cellular metabolism. He highly recommends taking vitamin Mi (colaminphosphate salts, Ca-RMg-AEP) to improve oxygen absorption.

Summary by D. Torres

CALIFORNIA IMPACT EV TEST

From *helio*, the Rhode Island Solar Energy Assoc. newsletter, Autumn 1995, p 3.

Seventy-nine Californians were given the GM Impact Electric vehicle for testing as part of a preview drive

program for two years. Each home has a 220 volt charging circuit. Each vehicle has a 110 volt inductive charging cable in the trunk for on-the-road charges. In a two week test period, the averages per driver were 460 miles, 6 trips, at about 8 miles each. Electrical energy cost 1.5 cents per mile at a special rate. Noted, drivers charged their batteries when not needed, signifying a fear that we must teach driver confidence [to overcome]. There are 800 in the national program in 12 cities that will end in mid 1996. All cars are GM Impacts.

ELECTRIC TRANSPORTATION MANDATE

from *helio*, the Rhode Island Solar Energy Assoc. newsletter, Autumn 1995, p 3.

Utilities must purchase alternate light fuel vehicles, beginning September 1995. DOE mandates a 30% purchase for utility fleets. The Federal Government will buy 400 vehicles by year end. EV America, an electric utility-led program, hopes to place 5000 EV's by 1997. Blue Bird corp. will deliver an electric bus to Georgia Tech that transports 26 people plus 2 wheelchair passengers. The 200 hp vehicle uses 112 twelve volt absorbed-electrolyte batteries (totaling 336 volts), drives at a maximum 55 mph, with a range of 80 miles on a single charge, and it takes 2 hours to recharge. The bus has heating and air conditioning. All electric utilities are welcomed to the further use of EVs, the markets are here!

The U.S. Postal Service is testing Electric Vehicles for mail delivery. With the earth's largest vehicle fleet, with 140,000 route deliveries [that would make a huge dent in commercial exhaust pollution].

A projection of production from 1998 to 2000 is some 127,000 electric vehicles by the Big Three car manufacturers.

Quick Charge rebate program offers \$5000 per EV sold in the Los Angeles area basin in California, founded by the South Coast Air Quality Management District. State and federal tax credits [should] lower the cost of EV's.

Calstart is a consortium of 80 major companies, dedicated to the development of clean transportation, and to further the placing of 5,000 electric vehicles on U.S. roads within the next 24

months. BAT Inc., has 3 types in production: a converted hatchback "flash," a four-door sedan, and a Ford Ranger pickup truck.

EDITOR'S COMMENTS

Evs, to us, mean both Electric Vehicles and Ken Shoulders' high-density charge clusters. We predict the coming of the day when on-board battery chargers for EVs will be designed using the Shoulders' EV technology together with new improved battery technology and using high efficiency magnetic motors.

Miscellaneous

INDIAN GOVERNMENT ABANDONS FOSSIL FUEL PROJECT

Future Technology Intelligence Report, vol 7, no 9, Sept. 1995, p 5.

The State of Maharashtra in India has just canceled a gigantic, almost \$3 billion, conventional fossil fuel project... that was already under construction by Enron (Houston). Reason? All the Indian State government will say is the project is "too expensive and environmentally risky."

NEWS FROM KEELYNET

Mike Randall has been investigating the best technique to dissociate hydrogen and oxygen from the water molecule. His first experiments were along the lines of Garrett's 1935 successes with the operation of a four cylinder automobile using gases generated by the "hydrolytic carburetor." Garrett (a father and son team) claimed they could produce sufficient volume of hydrogen and oxygen, combined with outside air to not require storage of the gas. This "on demand" system is a major advantage. (All details, including the patent, are listed in a KeelyNet archive.)

One of the major keys to the Garrett's claimed successes was the use of 25% battery acid mixed with incoming water. This increased conduction of the current for a much greater gas production. Mike tried it, using the gases produced to drive a 5hp Briggs and Stratton engine. Not only did the electrolyte get very hot because of the high DC, but the gas production was insufficient to keep the motor running.

So, Mike began looking at other systems, ranging from Dr. Henry Puharich's claims that a 600 cycle alternating current would produce the greatest efficiency in water dissociation to Stanley Meyers' claims of electrical discharges which could 'fraction' the water molecule. He also looked at the work of Yul Brown with Brown's Gas, and sent for information on it from the Tesla society.

He is very enthusiastic about this latter technique because it has produced the greatest amount of gas thus far. He is going ahead with designs and experiments to increase gas production. The initial application is for welding and should require from 300 to 500 amps. Secondary application will be for an internal combustion engine. Mike says he has been able to run the 5hp engine with 30 amps of current at about 2 volts supplied to the electrodes.

Mike is planning to write up the results of his experiments and will send them to *NEN* and other energy newsletters when he is finished.

ENERGY PROBLEMS LOOMING?

World Energy Update Courtesy of Gordon B. Moody

The Consumer Energy Council of America Research Foundation has issued an alert (Aug 21, 1995). Increases in transportation in the decades ahead will cause a 15 percent increase in congestion; 30 percent in oil consumption; 70 percent in oil imports; and a 30 percent increase in pollution from carbon emissions. The International Energy Agency (IEA) forecasts that oil consumption will reach 71 million barrels per day during the fourth quarter of 1995 and 100 million bpd by 2010.

The Chief IEA economist, Sean O'Dell, concludes that oil will dominate all forms of energy well into the 21st Century. The British weekly, *The Economist*, in

its energy survey suggests that energy demand could double by 2020; coal output will double; and more electrical generating capacity will be built over the next 25 years than has been built during the past 100 years.

None of the energy agencies are forecasting any energy production from new enhanced energy systems such as cold fusion. Without discussing why there is such a lack of information transfer, it will be useful to examine the rate at which a fundamental new energy development can impact the world's energy supply. The key question to be addressed is, "How fast will enhanced energy systems supply new energy?"

Background: Soon after the end of World War II, an extensive study was made of the projected use of computers. The conclusion was that the total world computer market in the year 2000 would be 1,000 computers. By 1975 there were an estimated 150,000 computers installed and operating. In 1995 it is estimated that the number of computers exceeds 80 million.

It took about 100 years for the telephone to penetrate into most of the homes in the U.S. Radio took about 50 years. Television about 25. The first personal computers were marketed in numbers in the early 1980s. In 1995 Colorado and Utah over half of families have personal computers in their homes.

At this stage it is wise to remember that this editor believed in 1989 that it would take about two years before a commercial prototype of a cold fusion device could be demonstrated. It was not until 1994 or 1995 (depending on whose inputs you use) that the first prototype was available.

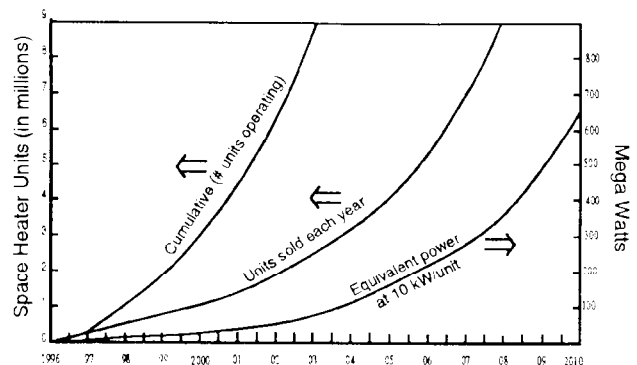
Here are the basic forecasting **assumptions** for the growing use of enhanced energy systems:

1. The year 1996 will be the year for major licensing to manufacturers and manufacturing prototypes will abound by December 31, 1996.
2. The first volume production of cold fusion systems will be space heaters (many targeted at home and office use) will occur in 1997. 500,000 space heaters will be sold in 1997.

3. The average installation will be a 10 kilowatt unit (approximately the heat output of a 35,000 b.t.u. small furnace).

4. The growth rate will be 30 percent per year, an exponential growth rate.

The following graph depicts the results of these assumptions.



By extrapolation from the figure, by the year 2010, there will be an annual world sales volume of space heaters of 15 million per year. Assuming that all units sold are operational, there will be 64 million units in service. At the conservative heat-producing output of 10 kilowatts per unit, there will be a total potential heat production of about 650 megawatts of equivalent electrical power.

A similar projection could be devised for the impact that the use of enhanced energy systems will have on the automotive industry. The forecast for automobile sales in the U.S. is 17 million per year in 1996. The number of operating cars is about 145 million. This is the market to be penetrated by zero-emission vehicles. For example, a cold fusion device could be designed to run a generator to charge the batteries in an electric (zero-emission) vehicle. Using somewhat the same assumptions and growth rates and assuming that 500,000 on-board battery chargers would be sold in 1997, by 2010 there would be an annual sales volume of about nine million units. The total number of electric automobiles, counting some destroyed or worn out, would be about 30 million electric automobiles. The current number in the United States is approaching 150 million autos. Therefore, that number would represent a market penetration of about 20 percent - an altogether reasonable or conservative figure.

However, 50 million electric vehicles would have a considerable impact on the amount of oil consumed. Assuming the savings of 5 gallons of gasoline per week per vehicle, there would be 250 gallons of gasoline saved per year for each of 30 million vehicles. If you assume that one barrel of oil supplies 30 gallons of gasoline, then that would be a reduction in oil consumption of 250 million barrels per year or roughly 1 million bbls of oil per day. The current U.S. oil production (not consumption) is about 6 million bbls per day. At \$20 per bbl, the U.S. could save \$ 5 billion per year on its balance of payments.

In conclusion, by the year 2010, the use of cold fusion devices in a variety of systems ranging from space heaters to battery chargers **would make a substantial difference in the demand for oil.** As a rough estimate, we should see about one-fifth of the energy requirements of the U.S. being provided by new enhanced energy systems by the year 2010. **This supply will have sufficient impact on energy futures to help moderate the impending energy crisis that is being predicted by various agencies and experts around the world.**

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Gordon B. Moody, Publisher/Editor, World Energy Update, Arlington, Texas, various issues including October 1995.

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Nothing great was ever achieved
without enthusiasm.

Ralph Waldo Emerson

Editorial

MEETING THE ONE-WATT CHALLENGE

By Hal Fox

During his presentation at the Second Symposium on New Energy, Dr. Hal Puthoff made a succinct challenge to those working to create energy devices that will force changes to our current limited scientific models. Puthoff capsulized the problem in his challenge for any of us to demonstrate a device in which at least one-watt of excess energy is clearly produced by creating a system that will provide its input energy requirements and deliver at least one watt to an external load.

THE PATTERSON POWER CELL™

Clearly, the **one-watt challenge** can be met by a Patterson Power Cell™ producing seventy (or more) times as much thermal energy output compared with the electrical energy input. However, we must power the pre-heater (when used in the electrolyte circuit) and we must power the pump that circulates the electrolyte. It is certainly easy to provide an electric heater and to use an electric motor for powering the pump. **However, it is a big challenge to design an efficient thermal-to-electric converter.** The current state of the art for thermal-electric devices, operating at the relatively low temperatures currently being produced, have conversion efficiencies of about three to twelve percent.

Consider the following approach: First, it is assumed that with a pressurized cell, the temperature of the electrolyte can easily be modified by changing the flow rate of the electrolyte through the reactor bed of plated spheres. The lower the flow rate, the more the temperature of the electrolyte will be increased. Also, the design of the planned heat exchanger can be used to control the input temperature of the electrolyte. Removing less heat will provide a higher input temperature of the electrolyte and will increase the power amplification factor through the reactor. Second, instead of using electrical energy to power the electrolyte circulating pump, use a small closed-cycle turbine driven by

thermal energy from the heat exchanger (such as a Sterling engine). Such use of thermal energy is more efficient than standard thermo-electric converters. **Therefore, we have defined a system in which only an estimated ten percent of the excess heat need be used for the heating of the electrolyte and the pumping of the electrolyte.** We still require electrical input power to operate the cell. With a power amplification factor of one hundred, we can even use a highly-inefficient thermo-electric converter to provide the required small amount of input electrical power.

OTHER NEW ENERGY DEVICES

The Faile-Reiter Circuit: One unexpected class of small energy devices are the non-inductive coils made of shielded wire, connected to diodes, and tucked into a metal pipe as reported by Samuel Faile and Nick Reiter [*NEN*, Oct. 1995, pp 7-9]. First, it is surprising that a non-inductive coil could pick up electrical energy. Second, it is more amazing that the use of shielded wire would not prevent the pickup of electrical energy. Third, why does the coil work better in a metal pipe, which would be expected to shield the coil.

The Shoulders High-Density Charge Cluster Device: Although the Shoulders device has been patented and the extensive patent information is publicly available, no groups except Kenneth Shoulders and his son Steve appear to be working on this important technology. In the U.S. Patent 5,018,180, Shoulders reports that over 30 times as much output compared to input energy has been measured.

The Magnetic Resonance Amplifier Tests: We have received copies of two official reports from independent laboratories that show power out ranging from 1.6 to over 4 times the input power to a magnetic resonance amplifier. One of the important factors in this device appears to be the type of magnetic material used as the core of the transformer. The transformer appears to be the most important component in this unusual energy-amplifying circuit.

The Lambertson Circuit: Although we have no independent tests of Dr. Wynn Lambertson's special circuit using a cermet (ceramic-metal) device, the

latest reports from Lambertson appear to be very favorable.

TWO MAJOR ENERGY SOURCES

There is no longer any reason to continue to deny the potential of new energy sources by making statements that it is against the Law of Conservation of Energy. This law has not been violated. The hypothesis (or model) of an empty space has been violated. **If we accept the fact of the existence of an energetic space, then we need only to transform space energy into useful forms of energy.** Therefore, **one of the two major new forms of energy that is now becoming available to the world is tapping the energy of space (also known as vacuum space energy or zero point energy).**

The second major new source of energy is cold nuclear fusion or as labeled by Dr. Edmund Storms, chemically-assisted nuclear reactions. The Patterson Power Cell™ (PPC) appears to be provide thermal power by the nuclear reactions of lithium and hydrogen (or some other form of new hydrogen energy). Regardless of the exact nature of the source of power from this new patented development, the PPC is certainly a cold fusion device.

It is remarkable that after generations of dependency on fossil-fuels as our energy sources, we have - in one decade - opened the door to two major sources of new energy. The impact that these discoveries and inventions will have on our way of producing and consuming energy will be enormous [1]. One class of devices (cold fusion) will be able to provide thermal energy for all types of processes where heat is required. The other class of devices (space energy transformers) will be able to provide direct electrical energy at any point on or off this spaceship earth.

A new age has begun, the clean energy age. Not only have we met the one-watt challenge but also we have taken the first steps to meet the megawatt challenge to provide clean, inexhaustible, and inexpensive energy for the future. This generation (especially in America) has been the greatest consumers of energy that the world has ever known. Rather than be reduced to the choices between polluting our planet or reducing our use of energy, we now have a completely rational choice: to

provide our children and our grandchildren with the means to further enhance their standards of living with essentially unlimited energy. **The energy sources for the next millennium and beyond have been discovered. Now our task is to make these energy sources available to every nation, kindred, tongue, and people.**

[1] Hal Fox, Cold Fusion Impact in the Enhanced Energy Age, c1992, published by Fusion Information Center, Salt Lake City, Utah. (The book includes a diskette with over 2500 (current to 1995) references to new energy literature.)

ENERGY FOR DEVELOPING COUNTRIES

A Vacation Experience

For those of us who live in an energy-rich country and are surrounded by our energy-consuming appliances, it is useful to visit some of the less fortunate peoples of this world. A week in Puerto Vallarta, Jalisco state in Mexico gave us the opportunity to get away from the tourist town and visit some outlying regions. Jalapa, which is accessible only by boat, was one such village. The tourist attraction of Jalapa was its waterfall, "only five-minutes walk" from the beach where the tour ship docks with its towed 20-passenger smaller boat.

"Only ten pesos, amigos, to go to the water fall beach," was the sales pitch of the six-passenger outboard motorboat. "Only seven minutes over and seven minutes back." With our desire to do something different than the rest of the tourist troop, the four of us took the proffered low-cost shortcut. They didn't tell us that there was no dock but we managed to jump off the bow onto the beach with only a bit of sand in our wet shoes. A ten-year old guide led us up the path to the waterfall, over, between, and around boulders ranging from turtle to elephant size. The "five-minutes trail" must have been timed by well-trained athletes.

Poised randomly on the rocky shore of the small river along the trail were a variety of homes and small businesses. In one "artisan" open-air, roof-only shop was a small bandsaw and a wood-turning lathe. No one was present on this Saturday afternoon, but the remains of cut wood indicated that

the entrepreneur was sawing bowl-shaped pieces from thick blocks of Mexican rose wood. About seven plastic pipelines, mostly one-inch lines with one two-inch line, were laced into the forest growth along the trail and heading toward the waterfall. This seemed to be the culinary water supply for the village.

House construction used some corner posts of reinforced concrete and various types of brick-sized blocks of concrete, fired brick, and some tile, with open holes for ventilation windows. Very little glass was seen. No all-pervading TV antennas. No power lines were noticed, but the artisan's shop was electric powered. The per-capita energy use of this village was estimated to be mostly for boat transport and wood for cooking and baking.

If you go to Jalapa on the bay, a two-hour tour-ship ride south of the Puerto Vallarta Marina, be sure to look up Mary (Maria) and for five pesos (no haggling on price, please) try her mother's pecan, coconut, or lemon-meringue pie. They are delicious.

The boat ride is an experience. "Ten pesos, amigos!" became "Ten pesos over and ten pesos back per person!" when I tried to pay my forty pesos for the four of us (and no "amigos"). "And give what you like to the boy," for our young trail guide. "I give you one-free drink when you get back if you take my boat." became "How can I give you free drinks when you didn't order a meal?" If you enjoy the feeling of being conned, get your "free" drink at Fanny's (the name of the restaurant.) If you long for a more gracious welcome, try someone else's place of business or have another piece of pie from Maria.

Jalapa needs two kind of energies: They need the energy that pumps and purifies water; energy that will drive the TVs, the microwaves, the toasters, and all the other appliances that seem to follow the increase in energy well-being. The men in Jalapa also need the kind of energy that would build a dock at the foot of the trail to the waterfall so that tourists didn't have to jump into the surf's edge, and the energy and industry to be a bit more gracious in their treatment of tourists.

LETTERS

LETTER FROM ROMANIA

from Dr. Peter Glück

...The Potapov business was interrupted due to the bad results of Scott Little and Gene Mallove (which I believe) and of some others (which I doubt!). Chris Tinsley was at St. Petersburg, but the actual tests will come only some weeks later. Communication is rather difficult, here the Internet is rapidly expanding but there are a lot of problems with the phone lines.

Yuri Potapov has invited me to join him when he will travel to the U.S. as his helper, translator and friend, but this seems to be impossible due to lack of money and to the bad situation with the tests. Anyway, I am firmly convinced that the Yumars are overunity and Potapov has other, even more efficient devices.

I am very discontented with the situation in the field of cold fusion, there is no coordination, no strategy, perhaps you personally could organize a more efficient form of conference where real discussions are possible. The participation of theorists should be very restricted, only the really realistic and clever ones should be invited. You know that I am convinced that NOW no 'hard' theory is possible and the correct way is that of Potapov and Patterson -- to construct a working device, improve it, and find an explanation later. There's no other way to cope with the situation, even if by some miracle, everybody will accept cold fusion. What is your opinion?

/s/ Dr. Peter Glück

SECOND LETTER FROM ROMANIA

From Emil Alexandrescu

{This letter is a follow-up to Mr. Alexandrescu's letter published in *NEN*, September 1995, vol 3, no 4, pp 15-16.}

I received your second letter to me and ... I'm adding new information according to your natural and spontaneous questions.

1) The destructive or nondestructive character of the Z-measurements depends: directly on manner of the connection between the plant tissue and the electrode(s) and, indirectly on the chosen electronics. If the plant is without skin or bark or rind (especially a liquieous one!), we fasten the electrodes to the stem, or stalk or bough by sticking them (using glue or a paste). If the plant-surface has a harder skin or bark or rind the electrodes may be thrust through the crust to the soft vegetal matter or simply applied on the surface (mechanically tied or stuck), in the first case, the tissues are wounded, of course, and in the second case, the resistance of the crust, which is important, has to be taken into account always. But the locally wounded tissues do not imply necessarily a "metrological damage." That depends on the plant itself, and on its age, and its "accommodation" to the electrode(s): on the surface, in subsurface or in depth, there are many other problems, besides the injuries themselves, for instance, the contact-potentials. They effect both impedance measurements and local tissue potential measurements, and they cannot be eliminated physically.

However, there is the possibility of impedance measurements without any contact, as in the case of some laboratory or industrial quantitative analyses such as of liquid mixtures or liquid-gas solutions. In such a case, the impedance variations, owing to dielectric constant variations, are measured. The adaptation of noncontact methods to the plants is still a cumbersome problem; especially the general theory of complex impedances, although successfully used in electrical engineering and electronics, fails often when it is applied to living matter.

2) The "global physiological state of the plant" results, for example, from the direct comparison between the plant curves and the homologous (closely related) physical curves. Different points of the plant show out the same qualitative Z-curves, both simultaneously plotted in the same time or successively plotted, at different (but not very remote) times.

3) The phase difference is measured as the "length of time" between the beginning moments of input periods of environmental parameters and the corresponding beginning moments of output periods of plant impedance. That is somewhat ... the length of time between input peak and plant output peak. Thus defined, the phase difference may be very diverse, but it appears in connection to the linear

correlation coefficients between input and output data, this fact allows a physiological interpretation.

4) You asked: "How does the tree know when to 'switch on' its 'operator' and start being more vigorous?" I'm asking, too: How does any big or small plant know to sprout out and grow, branch out, and make flowers (that bloom regularly, or are arranged in a geometrical order, etc.) or make fruit, and so on. Behind the apparently trite things and facts, we do encounter huge questions.

These four topics would deserve a separate detailed letter.

/s/ Emil Alexandrescu, Cluj Napoca, Romania

[More information about these measurements of plant energy will be reported later as further studies are made. Ed.]

Commercial Column

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

COMPANY: PRODUCT

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

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

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

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

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

Hydro Dynamics, Inc.: Hydrosonic Pump, heat-producing systems using electrical input with thermal efficiencies of 110

to 125 percent. Rome, Georgia. Contact James Griggs, Voice 706/234-4111 Fax 706/234-0702.

Nova Resources Group, Inc.: Design and manufacture ETC (Electrolytic Thermal Cell); EG (commercial power cogeneration module); and IE (integrated electrolytic system). Denver, Colorado. Call Chip Ransford, Phone (303) 433-5562.

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

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

INFORMATION SOURCES

Fusion Facts, monthly newsletter: Salt Lake City, UT 801/583-6232, also publishes Cold Fusion Impact and Cold Fusion Source Book. Plans on-line database access for late in 1995.

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

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

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

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

21st Century Science & Technology, bi-monthly, editor-in-chief Carol White, P.O. Box 16285, Washington, D.C., 20041. Includes cold fusion developments.

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

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

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

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

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