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## SECOND LOW-ENERGY NUCLEAR REACTION CONFERENCE

By Hal Fox

The quote from Dr. Bockris (see box) is an excellent introduction to this summary report on the Second Conference on Low-Energy Nuclear Reactions (LENR), held September 13-14, 1996 at College Station, Texas in the Holiday Inn.

"Twelve papers gave evidence that nuclear reactions take place in solid lattices in the cold. If this condition obtains still further confirmation, I suggest it constitutes a discovery of magnitude comparable with that of atomic disintegration with high energy neutrons (Rutherford, 1919), and nuclear fission by neutron bombardment (Hahn and Meitner, 1939). It [the reported discoveries] opens a new area of great potential. It has the potential radically to change the ideas of nuclear stability."

- Dr. John O'Malley Bockris  
World-famous electrochemist, Sept. 17, 1996.

About fifty scientists, engineers, and interested business leaders attended the Second Conference on Low-Energy Nuclear Reactions. This important conference was held at the Holiday Inn, College Station, Texas on September 13-14, 1996. The conference was not held on the campus of Texas A&M because 12 out of 12 members of the Department of Chemistry voted **no** to the request by Distinguished Professor of Chemistry, John O'M. Bockris to hold the meeting on campus. The vote was an example of a democratic process. The choice was an example of pathological skepticism.

Papers presented in all conferences range in importance, however, this conference must be considered as being of special importance **because the issue of low-energy transmutation was directly addressed with reports of several new sets of experimental data from prestigious scientists**. Here are some examples:

George Miley presented "Nuclear Reactions in Palladium-Hydrogen System." This paper is especially important because it is the first paper to explore the nuclear reactions occurring in the thin-film layers of nickel-palladium-nickel coated on small beads. This work was supported by CETI (Clean Energy Technologies, Inc.).

Mitchell Swartz presented an excellent paper discussing the cold fusion work using light water and nickel cells. Swartz made an excellent point about not using data from the noise level when making claims for excess heat. Swartz also indicated that all of his data is conservative because he does not subtract for the power consumed in electrolyzing the water. Swartz reported three to six times as much energy out as input into the cells. It appears that Swartz has accomplished some of the most effective work with the nickel-light water cold fusion. Swartz has not observed elemental changes.

Kenneth Shoulders presented an excellent paper on the possible effects of high-density charge clusters in promoting nuclear reactions in metal lattices. Shoulders has examined a variety of cathodes used in cold fusion work and has found evidence for numerous metal lattice damage sites caused not just by the strike of a high-density charge cluster (EVs) but apparently from nuclear effects caused by the highly-energetic EVs. To Shoulders, with his familiarity with EVs, the nuclear results are clearly evident. Shoulders has labeled such high-density charge clusters as NEVs or nuclear electrum validums. He suggests that the primary cause of nuclear reactions in cold fusion occurs by creating a brittle metal by hydrogen loading, causing cracks which produce EVs, and the energetic EVs cause nuclear reactions. Ken presented SIMs analysis of typical EV-reaction spots to show that the palladium had been transmuted into other elements. The concepts presented by Shoulders were not readily appreciated, as shown by a vote of two out of about fifty who thought

that this process was an explanation of heat production in cold fusion cells. We believe that the number of believers will increase as they further examine their cathodes. However, no one is saying that this is the **only source** of excess heat in cold fusion reactions.

The first-ever paper on the Neal-Gleeson Process was presented. This was not a scientific paper in the sense that a full disclosure of the process was not made. However, it was announced that third-party verification was being planned for the near future. From the preliminary data (taken from over 100 experiments) it was suggested that radioactivity could be reduced fifty percent or more in a one-pass operation taking only one to four hours. The paper strongly suggests that **if replicated by noted scientists** this process has great potential for ameliorating radioactive slurries, such as the 66 million gallons stored in over 170 tanks at the Hanford Site, Washington. (Note: The inventors are Rod Neal and Stan Gleeson who have been previously referred to as "the Cincinnati Group".)

John Dash (Portland State University) presented a paper extending his successes with heavy water and palladium to include the use of titanium electrodes. With each successful experiment that produces excess heat, there are shown to be low-energy nuclear reactions involved. His procedures are sufficiently reproducible that he brings in quality high-school students each summer to get them involved in this new technology of cold fusion. John Dash has offered to share his procedures with anyone who is interested.

T. Mizuno (Hokkaido Univ.); Z. Minevski (Lynntech); Russ George (E-Quest Sciences); Guang Lin (Texas A&M); R. Monti & E. Bauer (Burns Development); G. Rabzi (Ukrainian Int'l Academy of Original Ideas); Thomas Claytor (LANL); and T. Ohmori (Univ. of Hokkaido) all presented additional data on transmutation in their papers.

In summary: Drs. Bockris and Lin of Texas A&M University should be congratulated for a successful and important conference. All authors were asked to provide copies of their papers immediately after the conference so that these important papers can be published in the **Proceedings** immediately. We have already received 13 of the 21 papers presented. These papers will be published as Volume 1, Number 3, of the *Journal of New Energy*.

We are pleased to announce that articles published in the *Journal of New Energy* will be abstracted in *Chemical Abstracts*, *Engineering Index Monthly*, and *Metal Abstracts*. Scientists, engineers, and students world-wide will have access to the excellent papers

given at this important conference. The same staff that publish this newsletter also publish the *Journal of New Energy*. The same policy of rapid communication is a constant goal of this organization. If you are a scientist, you will want to subscribe to this new journal. **We will summarize and/or abstract important articles for the readers of NEN so don't let your subscription lapse.**

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## SELECTED ABSTRACTS FROM LENR-2

### Basic Experimental Studies Sessions

George H. Miley, (Fusion Studies Laboratory, U. of Illinois-Urbana), James A. Patterson (Clean Energy Technology, Inc. Dallas, TX), **"Nuclear Transmutations in Thin-Film Nickel Coatings Undergoing Electrolysis."**

### AUTHORS' ABSTRACT

Experiments using 1-mm plastic and glass microspheres coated with single and multilayers of thin films of various metals such as palladium and nickel, used in a packed-bed electrolytic cell (Patterson Power Cell™ Configuration), have apparently produced a variety of nuclear reaction products. The analysis of a run with 650-Å film of Ni is presented here. Following a two-week electrolytic run, the Ni film was found to contain Fe, Ag, Cu, Mg, and Cr, in concentrations exceeding 2 atom % each, plus a number of additional trace elements. These elements were at the most, only present in the initial film and the electrolyte plus other accessible cell components **in much smaller amounts**. That fact, combined with other data, such as deviations from natural isotope abundances, seemingly eliminates the alternate explanation of impurities concentrating in the film.

A 1-molar lithium sulfate solution in light water was employed for the electrolyte. A small excess heat of approximately  $0.5 \pm 0.4$  watts was recorded throughout the run. Reaction products were analyzed using a combination of secondary ion mass spectrometry (SIMS), Auger electron spectrometry (AES), energy dispersive x-ray (EDX) analysis, and neutron activation analysis (NAA).

Results showing a broad array of products such as found here have also been obtained with thin film coatings of other materials, e.g., Pd and multi-layers of Pd and Ni. The major elements contribute shift depending on the film material, however. Some of that work is still being analyzed and will be presented at ICCF-6 (Miley and Patterson, 1996).

The array of products found in these experiments is consistent with recent solid Pd and Au electrodes by Mizuno et al., 1996 and Ohmori and Enyo, 1996, respectively. A distinct advantage of thin electrode construction used here, however, is that the reaction zone becomes well defined, enabling quantitative measurements of the amounts of various products.

To explain the observation of products with atomic numbers both well above and below Ni, a reaction model is being developed that involves proton-induced excited complexes, followed in some cases by a fission of the unstable compound nucleus.

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Tadahiko Mizuno (Dept. of Nuclear Eng., Hokkaido Univ., Japan), Tadayoshi Ohmori (Catalysis Res. Cntr., Hokkaido Univ., Japan), Michio Enyo (Hakodate Natl. College of Tech., Japan), "**Isotopic Changes of the Reaction Products Induced by Cathodic Electrolysis in Pd.**"

#### AUTHORS' ABSTRACT

It was confirmed by several analytic methods that reaction products with mass number ranging from 6 to 220 are deposited on palladium cathodes subjected to electrolysis in a heavy water solution at high pressure, high temperature, and high current density for one month. These masses were composed of many elements ranging from hydrogen to lead. Isotopic distributions for the produced elements were radically different from the natural ones.

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Mitchell Swartz (JET Energy Technology, Inc., Weston, MA), "**Deuterium Production and Light Water Excess Enthalpy Experiments using Nickel Cathodes.**"

#### AUTHOR'S ABSTRACT

Select nickel cathodes can produce excess enthalpy (heat) during the electrolysis of light water solutions. A multi-body reaction involving two protons within the lattice of the fully loaded Group VIII transition metal cathodically driven to a ~1 kilomolar electron density, is proposed to account for the excess heat by the production of deuterons. The reactions occur through an intermediate excited nuclear state of a deuteron formed ( $D^+$ ), which then de-excites with the generation of a cloud of phonos. The excess heat is driven by the reconfiguration of the intermediate state to the more tightly bound deuteron ground state.

The phonos are linked to the de-excitation (a phuson) and are critical both because they enable a pathway

permitting further penetration of the coulomb barrier and also because they focus energy and interstitials into optical sites, thereby creating feedback mechanisms which can further fuel the desired reactions. The observed temperature rise occurs at disequilibrium as the well-mixed acoustical and optical phonos are unable to carry off all the local momentum and excess energy of the reactions. Special relativistic considerations indicate the phonon cloud in nickel subtends ~200 unit cells. Four-vector analysis indicates that these hypothesized reactions are consistent with conservation of energy.

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Robert Bass, Rod Neal, Stan Gleeson, & Hal Fox, "**Electro-Nuclear Transmutations: Low-Energy Nuclear Reactions in an Electrolytic Cell.**"

#### AUTHORS' ABSTRACT

A special electrolytic cell and power supply have been designed to promote low-energy nuclear reactions (electro-nuclear transmutations). Using electrical power ranging up to 1,000 watts, it has been experimentally determined that various high-mass parent elements can be fissioned into somewhat equal daughter products. The experimental evidence for nuclear reactions is based on the difference between input samples and processed samples as determined by commercial mass-spectrometer analysis and by gamma-ray emission spectroscopy.

Although other new elements are produced, the bulk of the fission elements appear to be mass fractions consistent with the conservation of the initial elemental atomic number. For example, tungsten can be fissioned into cadmium and iron. Thorium has been fissioned into mercury and neon. Up to seventy percent of a parent element has been fissioned with a few hours of processing time. Further development work is planned, especially for application to the stabilization of radioactive slurries. It is important that these preliminary results be independently replicated and verified.

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T.N. Claytor, M.J. Schwab and D.G. Tuggle (Los Alamos Natl. Lab., Los Alamos, NM), "**Tritium Production from Palladium and Palladium Alloys.**"

#### AUTHORS' ABSTRACT

A number (22) of pure palladium samples and palladium alloys have been loaded with a deuterium or hydrogen plasma in a system that allows the instantaneous measurement of tritium. By carefully controlling the high

pressure plasma conditions, the plasma can be constrained to only contact palladium surfaces and to only lightly sputter the palladium. Long run times (up to 200 h) result in an integration of the tritium and this, coupled with the high intrinsic sensitivity of the system ( $\sim 0.1$  nCi/1), enables the tritium measurement to highly significant sigma  $> 10$ . In addition to the real time tritium measurement, the deuterium gas can be combined with oxygen, at the end of a run, resulting in water samples that were counted in a scintillation counter. The results of these confirmatory measurement of the tritium in these water samples agree quantitatively with the decrease in tritium as measured by the ion sensor. However, surprising concentrations (up to  $1.5 \times 10^6$  dpm/ml) of tritium were found in several samples that had been exposed to a hydride inhibitor. We have continued to investigate the effects of hydrogen additions on the output of tritium in these types of experiments and find that hydrogen additions always suppress tritium production. We will show the difference in tritium generation rates between batches of annealed palladium, as received palladium and the palladium alloys (Cu, Ni, Be, Li, Hf, Hg and Fe) of various concentrations to illustrate that tritium generation rate can vary greatly from alloy to alloy as well as within a specific alloy, dependent on concentration. Other metals (Pt, Hf, Ni, Nb, Ta, V, W, Zr) have also been run in the system as background samples or to determine if tritium could be detected in the gas analysis system. In nearly all cases they have produced results very close to background drift rates.

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T. Ohmori (Catalysis Res. Cntr., Hokkaido Univ., Sapporo, Japan), T. Mizuno (Faculty of Eng., Hokkaido Univ., Sapporo, Japan) and M. Enyo (Hakodate Natl. College of Tech., Hakodate, Japan), **"Isotopic Distributions of Heavy Metal Elements Produced During the Light Water Electrolysis on Gold Electrode."**

#### AUTHORS' ABSTRACT

Some 100  $\mu$ g of fine black porous deposits comprising mainly of Au, Hg, Pt, Fe, Si and F were obtained during the cathodic electrolysis on Au electrodes in 0.5 M  $\text{Na}_2\text{SO}_4$  and  $\text{Na}_2\text{CO}_3$  **light water solutions** for 20-30 days at a current densities  $> 300$  mA/cm<sup>2</sup>. The isotopic distributions of these elements other than Au, Pt and F determined by SIMS analysis were found to deviate from their natural isotopic abundance. The structure of Au electrode surface after the electrolysis revealed very unusual aspects.

Ken Shoulders and Steve Shoulders (Bodega, CA), **"Observations on the Role of Charge Clusters in Nuclear Cluster Reactions."**

#### AUTHORS' ABSTRACT

Deuterium-loaded palladium foils, produced by both electrolytic and ultrasonic processing, have been micro-analyzed for nuclear reactions. The characteristic strike marks of charge clusters, known as EVs, have been found to occur concurrently with nuclear reactions in micrometer-sized areas. In the electrolytic case, the reaction is attributed to charge clusters generated from mechanical energy, first stored and then suddenly released, from a brittle metal lattice **through the mechanism of fracto-emission of electrons**. For the acoustic case, EVs are generated by charge separation in a collapsing bubble. When areas previously free of low energy nuclear reactions are bombarded in either vacuum or air by externally generated charge clusters, nuclear reactions are produced at the bombardment site. Charge clusters are considered to function as a collective accelerator capable of injecting a large group of nuclei into a target with sufficient energy density to promote the nuclear cluster reactions observed.

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#### From Theoretical Models Session

Yeong E. Kim and Alexander L. Zubarev (Dept. of Phys. Purdue Univ., West Lafayette, Indiana), **"Nuclear Physics Mechanisms for Gamow Factor Cancellation in Low-Energy Nuclear Reactions."**

#### AUTHORS' ABSTRACT

In our recent paper [1], we showed that a Gamow factor cancellation (GFC) can occur for nuclear fusion reactions if the imaginary part of the effective nuclear interaction in the elastic channel (ENIEC) has a small component of a finite long-range interaction (FLRI), but we could not prove nor rule out theoretically the existence of such a FLRI component in the imaginary part of ENIEC. In another recent paper [2], we demonstrated (without a rigorous derivation) a possibility of the existence of FLRI components if the target nucleus has a weakly bound excited state ("halo" nuclear state). Most recently, we have succeeded to derive rigorously a new type of FLRI interaction in the imaginary part of ENIEC for the case in which one of the final-state nuclei has an excited halo nuclear state [3]. We have obtained a separable form factor for the imaginary part of ENIEC which at large distances behaves as  $\cos(k_o r - \eta \ln 2k_o r + \delta) \psi_n(r)/r^A$ , where  $k_o$ ,  $\eta$ ,  $\delta$ , and  $\phi_n(r)$  are the final state wave number, the Sommerfeld parameter, the phase shift, and the wave

function for the excited  $p$ -wave halo nuclear state, respectively. Consequences and implications of our results for the cold fusion phenomena are described. GFC due to effects of excited halo nuclear state for low-energy radiative nuclear fusion reactions are also described using a three-body formulation [4].

[1] Y.E. Kim and A.L. Zubarev, *Nuovo Cimento*, vol 108A, pg 1009-1025 (1995).

[2] Y.E. Kim and A.L. Zubarev, *Genshikaku Kenkyu*, vol 40, no 5, (1995), pp. 27-36.

[3] Y.E. Kim and A.L. Zubarev, "Excited Halo Nuclear State and Long Range Interaction in Nuclear Reactions," to be published in *Physical Review C*. (Oct. 1996)

[4] Y.E. Kim and A.L. Zubarev, "Low-Energy Radiative Nuclear Reactions Involving Weakly Bound States," submitted to *Fusion Technology*.

[Editor's Note: The above paper is highly mathematical. The reason for its inclusion is that as a result of this important conference, Dr. Kim reported to Ken Shoulders that Shoulders has probably provided the **key ingredient that has been missing**. Dr. Kim is one of the persistent theoreticians that has been struggling to make sense out of the variety of cold fusion experimental data. This editor has followed Kim's work for several years and has high regard for Dr. Kim's ability. It is predicted that we will hear more about Professor Kim's excellent work.]

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Albert Cau (A.R.T., Paris, France), "**Natural Nuclear Synthesis of Superheavy Elements (SHE).**"

#### AUTHOR'S ABSTRACT

As soon as nuclear scientists became convinced that some superheavy elements (SHE) could exist with atomic numbers around 114 and 126, numerous attempts have been made to detect them in natural samples and to synthesize them in heavy ion accelerators. No positive results have been obtained until now since no elements higher than 101 have been isolated for chemical study.

A new direction to the research of SHE is taken. The source of the present work is old alchemy as described in old treatises written prior to 1850. It appears that the key material used by alchemists was pitchblende. The hypothesis that SHEs could be peculiar elements but only stable in the form of fluorides is discussed.

The mechanism conducive to the production of SHE, in a chemical medium is studied. The main point is that SHE are necessarily produced via *soft fusion*, a synergism of exoenergetic nuclear reactions (proton absorption) and endoenergetic nuclear reactions (light element fusion)— a mechanism that allows the creation of macroscopic amount of SHE fluoride under mild conditions.

The nuclear reactivity of natural mixtures containing uranium and light elements is described. A 1986 experiment showed an unexpected nuclear activity characterized by very intense neutron bursts. The 1996 experiment shows increases of gamma activity upon heating and the production of a peak around 50 KeV.

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Shang-Xian Jin and Hal Fox (Fusion Information Cntr., Inc., Salt Lake City, Utah), "**Possible Palladium-Related Nuclear Reactions.**"

#### AUTHORS' ABSTRACT

The recent discoveries by Bockris and Minevski and by Mizuno et al. of apparent numerous low-temperature nuclear reactions has challenged current atomic models. By making the assumption that standard conservation laws for nuclear reactions would be preserved, a large variety of possible nuclear reactions have been proposed and checked for obeying conservation rules. The purpose of this paper is to present a list of some possible nuclear reactions between palladium isotopes and the following single particles: deuterons, protons, neutrons, and alpha particles.

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#### Innovative Approaches Session

G.H. Lin and J. O'M. Bockris (Dept. of Chem., Texas A&M Univ. TX), "**Anomalous Radioactivity and Unexpected Elements as a Result of Heating Inorganic Mixtures.**"

#### AUTHORS' ABSTRACT

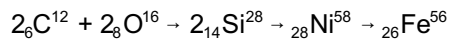
This paper reports on anomalous radioactivity and unexpected elements observed in 1992 at the Texas A&M University as a result of igniting a mixture of inorganic compounds. The details of the experiments and the analysis in our laboratory and other private laboratories are presented.

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T. Grotz (Wireless Engineering, Inc., Craig, CO) "**Investigation of Reports of the Synthesis of Iron via Arc Discharge through Carbon Compounds.**"

## AUTHOR'S ABSTRACT

Recent research has investigated the transformation of carbon to iron under certain experimental conditions. Reports by Pulver and Oshawa of iron formation in carbon by exposure to an electric arc are the subject of this report. Iron formation was originally proposed as a result of the reaction of carbon and oxygen to form silicon, then nickel and finally iron as follows;



Particles of magnetic material attracted to a magnet were given as proof of a transformation. Duplication of this experiment under more controlled conditions with analysis of the iron content of the carbon sample before exposure to an electric arc discharge lead to the conclusion that the iron found in the sample may be due to other factors than originally proposed.

[It is suggested that Grotz repeat this experiment using highly-pure water, highly-pure carbon and that he follows the work of Ken Shoulders and makes sure that the electrodes are producing nuclear high-density charge clusters (NEVs). Ed.]

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Roberto A. Monti, "**Low Energy Nuclear Reactions: Experimental Evidence for the Alpha Extended Model of the Atom.**"

## AUTHOR'S SUMMARY

An up to date list of experimental tests constituting, in my opinion, a good validation for the alpha-extended model of the atom, is presented.

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A. Michrowski (President, P.A.C.E., Inc., Canada), "**Advanced Transmutation Processes and Their Application for the Decontamination of Radioactive Nuclear Wastes.**"

## AUTHOR'S ABSTRACT

There are deviations to the standard model of radioactive atomic nuclei decay reported in the literature. These include persistent effects of chemical states and physical environment and the natural, low-energy transmutation phenomena associated with the vegetation processes of plants. The theory of neutral currents is proposed by Nobelist O. Costa de Beauregard, to account for the observed natural transmutations, also known as the Kervran reaction. "Cold fusion" researchers have also reported anomalies in the formation of new elements in cathodes. This body

of knowledge provides the rationale for the observed, successful, and developed advanced transmutation processes for the disposal of nuclear waste developed by Yul Brown involving a gas, developed by him, with a stoichiometric mixture of ionic hydrogen and ionic oxygen compressed up to 100 psi. Another procedure, still in experimental stages, involves the environmental interaction of non-Hertzian electromagnetic fields and targeted radioactive samples. In both methods, the radioactivity in samples decreases by up to 97% rapidly and at low cost.

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The following two papers were also presented:

Georgiy S. Rabzi (Ukrainian International Academy of Original Ideas, Southern Branch, Odessa, Ukraine), "**Natural Cold Fission - Natural New Energy - Natural New Physics.**"

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Edward Lewis (Chicago, Illinois), "**Recent Experiments that Produced Fundamental Anomalies for Novel Hypotheses Concerning the Production of Elements, Superconductivity, and Anomalous Radiation.**"

[Mr. Lewis is highly intrigued with plasmoids. We have previously published papers from Lewis. After hearing the paper from Ken Shoulders, Lewis asked the audience how many believed the high-density charge clusters were a cause of excess thermal energy in cold fusion cells. Two persons voted affirmatively. This editor believes that many of the over "almost fifty" persons in the audience will vote affirmatively by the time of the next conference. Ed.]

### CONFERENCE VIDEOS

A set of six (6) video tapes, recording the scientific presentations at the second International Low Energy Nuclear Reaction Conference (College Station, Texas, September 13-14, 1996) is available now. The tape format is standard VHS. Price: US \$100 for U.S. and Canada, US \$120 for other foreign. Price includes shipping. Send check or money order to: Guang Lin, Dept. Chemistry, Texas A&M University, College Station, TX 77843 for ordering. Please contact Guang Lin at 409-845-3661 for details.

# Anti-Gravity

## ANTI-GRAVITY COMES AND GOES IN LESS THAN A MONTH

### TWO LETTERS FROM HAROLD ASPDEN

### ANTI-GRAVITY BREAKTHROUGH

It was reported on page 2 of the British newspaper *The Sunday Telegraph*, September 1, 1996, that **the world's first anti-gravity device, now being taken seriously by NASA**, is to be the subject of a paper accepted for publication by the *Journal of Physics D: Applied Physics*, one of the main periodicals published by the Institute of Physics in U.K. The discovery is that of scientists in Finland.

The newspaper article gives the details and shows the constructional features of the device. It even says that objects high above the device lose weight - even the air pressure on every floor level above the laboratory decreased! It is said that this discovery "has been rigorously examined by scientists," which one cannot doubt, given that the strict peer-review of that particular British periodical would be very hostile to the notion of anti-gravity.

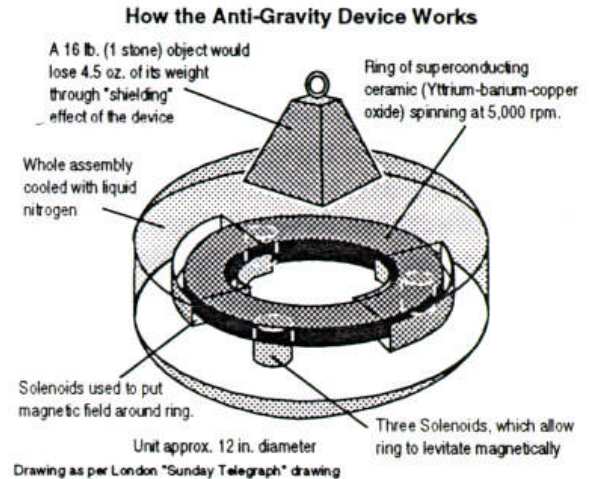
Note that the article envisages the prospect of the discovery extending to power generation as well as space travel.

Note also the fact that the core principle depends upon spinning a conductor in a magnetic field, which is the theme I pursue when I refer to "vacuum spin." The aether phase-lock which I discuss around p. 24 of my new book [Aether Science Papers](#) is induced either by concentrating charge in a plasma ball to set up a radial electric field in that conductive plasma or by spinning a conductor in a magnetic field to induce the radial electric field. One gets "free energy" drawn in from the aether and that means an out-of-balance force and we go from there into anti-gravity.

I am tempted now to suggest that the Finnish anti-gravity device is developing and shedding "vacuum spin" or, rather "aether spin" in the form of weak ghostly versions of thunderballs which levitate above the device and reduce the mass of the object they pass through in their homeward journey to a destiny in which they remerge with the aether of enveloping space.

Hopefully, the world of science may now see sense in revising their opinions on the Hayasaka-Takeuchi Experiment, which I refer to in my anti-gravity paper, the penultimate of the 14 papers reproduced in [Aether Science Papers](#).

/s/ Harold Aspden



### More on Anti-Gravity

Following the news of the anti-gravity discovery from Finland, and just in case some *NEN* readers wonder how this may fit in with what they may have heard about the Biefeld-Brown effect, I add the following to my earlier note.

Like most scientists, I am not willing to believe all that is claimed about strange phenomena involving levitation and "free energy." I therefore paid little attention when I read about the discovery of Townsend Brown. The story is that he constructed a kind of saucer-shaped aluminum canopy and set up an electrode underneath it. Then he applied some 50 kV of electric potential between the canopy and the electrode, whereupon the whole device lost weight!

I sat up and took more notice when I saw, quite recently, a T.V. program here in U.K. and there the device was demonstrated as trying to float upwards in defiance of the laws of physics that I had been taught at school. One imagines corona discharge producing some heat and then convection performing the levitation function, but I then took another look at John Davidson's book [The Secret of the Creative Vacuum](#) (ISBN 0 85207 202 3), page 194 and saw that the U.S. Navy had decided it was all due to "ion-momentum transfer" or "electric wind" and that later research in Paris proved the device did work in a vacuum.

Note then my argument. A weak radial electric field in a conductive medium or a strong radial electric field in a vacuum produces "aether spin" and brings aether energy into the act, which involves an out-of-balance linear force. The lower electrode would involve a corona-type ball of charge centered on the lower electrode but with no arc-over to the canopy. That plasma ball becomes the seat of action nucleating the "aether spin" and shedding those levitating weak versions of thunderballs. There is spin combined with the inevitable precession, which is a link to the Laithwaite gyroscopic levitating devices, but the Biefeld-Brown effect had a saucer-like canopy which provided a boundary surface for an upper section of the hemisphere bounding that "aether spin" activity. If then this means a thrust by the aether on the underside of the canopy, with no downside, then one can see how levitation occurs. [Alternatively, if the aether has a net downward force, the lessening of the downward "push" would result in an effective lessening of gravity. Ed.]

In the spinning superconductor device invented in Finland there are solenoids wrapped around the superconducting ring. These can activate precession of any "aether spin" set up about the vertical axis. I conclude with the remark that "aether spin" brings in "aether energy" and precession of "aether spin" has a way of accelerating "spin-off" and weakening the gravity force on coextensive matter. The aether cannot be ignored in such research.

/s/ Harold Aspden

### ANTI-ANTI-GRAVITY REPORT

Courtesy Steve Roen

Robert Matthews, "Antigravity machine weighed down by controversy", *New Scientist*, September 21, 1996, page 7.

#### EDITOR'S SUMMARY

It was previously reported that a paper carrying the names of Eugene Podkletnov and Petri Vuorinen of Tampere University in Finland was accepted for publication in *Journal of Physics D: Applied Physics* after proper peer review. According to Matthews, the paper has now been withdrawn. It appears that this work was done in the early 1990s and has only recently received a flurry of attention. Tampere University denies any knowledge of the work and Vuorinen stated that he had never worked on the paper with Podkletnov. Podkletnov appeared surprised and suggested that it must have been another Petri Vuorinen who worked with him -- but no such other Petri has been located.

When Podkletnov withdrew his paper on September 9, 1996, he stated: "This is an important discovery and I don't want it to disappear", he told *New Scientist*. Meanwhile, the mystery deepens. It is reported from other sources that NASA is very interested and is performing experiments. A caller to this editor also reported that the effect had been replicated in the U.S. by a person who bought the parts from the Edmund's Scientific catalog. This editor asked to be put in touch with whomever had replicated the antigravity effect so that we could tell our *NEN* readers how to repeat the experiment. We are all very interested in any working antigravity devices because rocket propulsion is the most inefficient method of moving an object ever used extensively by man (It takes millions of pounds of fuel to put a relatively few pounds into orbit.) We expect that we will hear more about antigravity. Sorry that we can't bring you more exciting news.

## INFINITE ENERGY

Contents, vol 2, no 8, May/June 1996.

#### EXCERPTS

"**The Reality of Perpetual Motion**," by Dr. Harold Aspden, pp 15-22.

Based on simple Newtonian mechanics, perpetual motion within a purely mechanical device is impossible. However, once one understands the true electrodynamic nature of the force of gravity and how interactions are set up which involve energy transfer between electric charges, then perpetual motion, subject to machine wear and tear, is just a matter of exercising one's ingenuity. This is because electric charges in motion interact as a function of motion relative to one another and by virtue of their interaction with the all-pervading sub-quantum medium that some call a frame of reference, but which we will here refer to by its proper name, the aether.

There are three ways in which one can contemplate building a "perpetual motion" machine, which is really what we are all talking about when we use terms such as "free energy." These three are:

1. Build something you imagine might work and then pray for a miracle as you try to set it running.
2. Be attentive to claims made by others who say they have built something that does perform such a miracle and then try to replicate it from the gist of what you can find they have disclosed.



3. Study the detail of the mechanism of an existing very large perpetual motion machine, which you know does work and to which you have access, and see if, by first probing the physics of that mechanism, you can devise a way of tapping into its energy activity, just as the alternator draws electrical power from the engine in your automobile.

The middle course above is the one normally adopted and it has its excitement but is very frustrating. I have chosen the third track, and even though that has had its frustrations I have advanced relentlessly. I believe I now understand the physics needed to access that hidden energy and so can help to build the new energy technology....

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**"The Correa Invention: An Overview and Investigation in Progress,"** by Michael Carroll, pp 10-14, 7 figs.

This is a follow-up to the feature story on the Correa Pulsed Abnormal Glow Discharge Reactor in *IE* #7. Because of time limitations, one patent and parts of another and a laboratory report by the Correas were published in that issue. The patents and report are informative, but require careful study to extract the data of most interest to readers of *IF*. In preparing this article, the author had the benefit of several long conversations with Dr. Correa, access to the full text of three patents, and some recent data taken with digital instrumentation.

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**"Science Revolutions,"** by Dr. Ramond Prasad of England, pp 28-29.

"Because of the way in which the cold fusion era started with the Fleischmann-Pons announcement, together with the three flawed attempts at replication, the scientific community is polarized between two opposing paradigms, one that cold fusion exists, the other that it does not."

"There is absolutely no reason why a newly discovered phenomenon should have a theoretical explanation lurking in the undergrowth of established physical theory, apart from the conceit of established theoreticians. They would have you believe that everything is known and comprehended."

**"An Interview with Dr. John O'M. Bockris and Dr. Hal Puthoff,"** 21st Cent. Radio's *Hieronimus & Co.*, Cold Fusion Special June 23, 1996. Transcribed by Jed Rothwell, *Infinite Energy*, vol 2, no 8, May/June 1996, pp 38-43.

#### EXCERPTS

On June 23, 1996, Dr. Bob Hieronimus conducted a live radio interview with Dr. Eugene Mallove, Professor John O'M. Bockris, and Hal Puthoff.

**Bockris:** "I think that Rutherford's work was the beginning of what we call now high energy physics. This is a very large part of physics, and it has as a basic assumption - that you need enormous energies. Now what has happened in the last five or six years is: It's been found that nuclear reactions can be made to occur inside solids, with rather small energies. Instead of having to strike them with these enormous energies which cost so much to set up and to have apparatus, you can do it all for  $10^{-4}$  (as it were) the price. That's the great important thing. The cost comes down and one can obtain nuclear reactions under very, very simple conditions."

"The furor, I think, was due to two things. On the one hand, I think a great deal of the emotion which went into it in 1989 and 90, was sheerly emotion. I think that people were ... the old people were arrogant and they thought they had it all, and they thought they had to have these enormous energy releases, and when it was proved that you could do it very simply, with lesser energy, they were very, very annoyed!"

**Puthoff:** "Whenever you try to accelerate a body there is this resistive force that holds you back, and that is what we experience as inertia. So when you are trying to move your car down the street when its battery has gone dead, all that effort it takes to get it moving is the fact you are actually pushing against the vacuum [aether]. Unlike an ordinary wind, just moving at constant velocity, you don't feel this force at constant velocity but you do feel it whenever you are trying to accelerate or to deaccelerate an object."

"When we started our research into the zero-point energy underpinning of these kind of phenomena, the thing we realized is that gravity, inertia, and a number of other phenomena are really consequences and results of this underlying energy bath, you might say, that we are in. And so, having that knowledge and developing some equations about what effects it has, we are now at a point where we can consider: Okay, if we understand how gravity is produced by this underlying energy, and

if we understand how inertia is a consequence of this underlying energy, we can now ask new kinds of questions. Can we manipulate this energy? And the answer is: Yes."

#### ABSTRACTS ..... of *Infinite Energy* Papers/Articles

Dr. David Deak (Quantum ΣoniX Corporation), "An Ultrasonic Momentum Transfer Pump," *Infinite Energy*, vol 2, no 8, May/June 1996, pp 58-62, 5 refs, 4 figs.

#### AUTHOR'S ABSTRACT

This paper relates to an Ultrasonic momentum transfer pump and its pumping action for fluids. It has particular reference to pumps for liquids that would replace electromechanical pumps in the main classification of compression pumps and force pumps.

The two categories of electromechanical pumps, namely, force and compression pumps, all require moving parts for operation and in some special way these parts are designed in relation to the amount of fluid to be pumped per unit time and the overall volume of the physical pump design. Methods of design for increased pressure equivalent to conventional pumps are discussed along with several "non-pump" applications relying on this technology.

Paul E. Rowe (Mashpee, MA), "Controlled Transmutation of Elements Under Surprisingly Mild Conditions?" *Infinite Energy*, vol 2, no 8, May/June 1996, pp 30-31, 10 refs.

#### AUTHOR'S INTRODUCTION

Bockris and Minevski of Texas A&M University recently reported experimental results which strongly suggest that palladium atoms near the surface of hydrogen atom-saturated catalysts are transformed into atoms of other elements under certain mild electrical conditions.

It is extremely difficult (perhaps impossible) to explain these experimental results, unless one accepts that transmutation of elements has occurred during these experiments.

T. Minzuno, T. Ohmori, and M. Enyo, reported similar results with palladium catalysts saturated with deuterium atoms. The isotope make-up of some of the elements

produced was quite different than that which occurs in nature.

This paper will attempt to show that experimental results reported prior to 1930 lead to a similar conclusion.

Dr. Edmund Storms (Santa Fe, NM), "A Study of Those Properties of Palladium that Influence Excess Energy Production by the 'Pons-Fleischmann' Effect," *Infinite Energy*, vol 2, no 8, May/June 1996, pp 50-57, 11 refs, 27 figs, 3 tables.

#### AUTHOR'S ABSTRACT

A large collection of palladium plates having different [manufacturing] treatments were examined to determine the composition limit produced after electrolysis in LiOD-D<sub>2</sub>O electrolyte, the amount of excess volume produced by the contained deuterium, the open circuit voltage generated by the material referenced to a platinum electrode, and the deloading rate in air. The influence of these properties on the ability to produce excess power from the "Pons-Fleischmann" effect was explored. The palladium was found to be very nonuniform with respect to the measured properties. Excess power production was associated with a minimum amount of excess volume and an open circuit voltage above 1.0 V. Samples capable of producing excess energy can be reactivated even after deloading or removal of the surface.

## Miscellaneous

#### CALIFORNIA - ZINC-AIR BATTERY TESTED

Courtesy of Chris Fischer

A press release from BAT International, Burbank, Calif., announces the testing of the first production zinc-air electric vehicle battery cells. The cells were rated at 400 ampere hours. The field testing is expected to confirm that this type of battery can be used to achieve over 200 miles per charge in a production electric vehicle.

#### MASSACHUSETTS - SPARK-INDUCED C.F.

Ernest D. Klema and Gerald W. Iseler (Tufts Univ., College of Eng., Medford, MA), "Spark-Induced Radiation from Hydrogen or Deuterium-Loaded

Palladium," *Fusion Technology*, vol 30, no 1, Sept. 1996, pg 114-115, 3 refs.

#### AUTHORS' ABSTRACT

Three sets of experiments were conducted to investigate the radiation produced by spark discharge on (a) oxidized palladium samples, (b) oxidized palladium samples loaded with hydrogen, and (c) oxidized palladium samples loaded with deuterium. In the first set, no radiation was measured above background; in the second set, 24-KeV X-rays were observed, and in the third set, 17-KeV X-rays were produced.

The intensities of the hydrogen X-rays were measured over a period of 12 days. During this time, the daily fluctuations overshadowed any long-term variation that might be present. The deuterium X-rays were followed over a period of 26 weeks. Again, the intensities fluctuated with time, obscuring the long-term trend; in one case, there was a 40% change from one day to the next.

[Fracto-emission of EVs and EVs striking the Palladium produce X-rays.]

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#### TEXAS - ENERGY SECURITY

Courtesy of Gordon B. Moody

Gordon B. Moody (Publisher/Editor), "Editorial", *Global Energy Outlook*, August 1996, Vol 1, no 7, page 1.

#### MOODY'S EDITORIAL

Offshore exploration activity is growing at a feverish pace worldwide. The U.S. drillers, plagued for nearly a decade by oversupply, have suddenly found that their industry has been reborn. Utilization of available rigs is now above 90 percent in the offshore arena, and onshore rigs are likely to reach the same utilization rate within a year or two. Natural gas demand is threatening to outpace supply. The rapid growth of industry along the Pacific Rim will tax the ability of producers worldwide to meet energy demands of the 21st century. Only a handful of countries in the Middle East have the capability to expand their capacity to produce the oil to fuel the rapid growth of the world's developing countries.

The United States needs to reexamine its energy policies and look to its neighbors both to the north and to the south for a hemispheric solution toward its energy security.

#### EDITOR'S COMMENTS

Gordon Moody lives in Utah but commutes to Arlington, Texas to publish the *Global Energy Outlook*. Moody visits our office and is gradually adding new-energy information to his publication. One of the articles in this issue of *Global Energy Outlook* is titled, "Asia-Pacific to Replace North Sea as Leading Offshore Region by Year 1999." Another article is "Worldwide Oil Demand Expected to Grow 1.7 Million Barrels per Day During 1996." In this article Kenneth L. Bird, President of the Illinois Association of Railroad Passengers, is reported as follows: "U.S. policy makers maintain troops in the Middle East to protect the artificially low-priced oil supply that fuels the urban-sprawled, four-wheel drive society of the United States. Gone is any semblance of conservation or alternative fuel programs. ... politicians have demonstrated their lack of courage in facing our lack of energy independence."

*Global Energy Outlook's* address is P.O. Box 13830, Arlington, Texas 76013. Fax 817-457-8224.

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#### TEXAS - TUBULAR BALLS

"Carbon Chemistry: Tubular Balls," Science and Technology column of *The Economist*, 3 August 1996, p 70.

#### SUMMARY

Nanotubes (or buckytubes as they are sometimes known) are related to the buckyball (Buckminsterfullerene) which was discovered in 1985 by Dr. Richard Smalley (a chemist at Rice University, Houston, Texas) and Harold Kroto (University of Sussex, Britain). The buckyball consists of 60 carbon atoms at the vertices of a shape known as a truncated icosahedron, in which each carbon atom is linked to three of its neighbors.

Nanotubes are similar in concept, each carbon atom also has three links. But the models of this molecule look more like cylinders made of chicken wire instead of soccer balls. Over the past few years, chemists have created quite a collection of various shapes, but they have not yet made anything practical. "Many uses have been proposed for the original 60-carbon fullerenes — lubricants, catalysts, superconductors and even anti-viral agents. But the only industry the buckyball has really revolutionized is the generation of scientific papers."

Buckytubes, the optimists hope, may change that. Recent research has confirmed that they are the strongest fibers known. Researchers also found that they can conduct electricity, like metals. And if nanotechnology is destined to be more than science fiction, then buckytubes seem to be the right components to build with.

Carbon atoms bonding with each other cling very tightly – hence the hardness of diamonds, a form of carbon in which each atom is linked to four neighbors. Carbon fibers used as reinforcement have long exploited this fact both strongly and lightly, in uses ranging from tennis rackets to aeroplanes. But these carbon fibers are rather crude, patchwork strips of graphite "pasted" into columns.

The strongest carbon fiber, in theory, should be a seamless cylinder of mutually binding carbon atoms – a nanotube.

Measuring this strength is challenging since nanotubes are 1,000 times skinnier than most carbon fibers. In June Michael Treacy and Thomas Ebbesen, at the NEC Research Institute in Princeton, New Jersey, announced that they had managed to measure a tube's strength indirectly. Dr. Treacy, trying to look at individual nanotubes through an electron microscope, found that he could not bring them into focus, and realized that this was because they were vibrating. He and Dr. Ebbesen then realized that, by applying standard engineering theory to the vibrations, they should be able to calculate a tubes stiffness from the rate at which its vibrations grew as its temperature rose. Buckytubes, they discovered once they had done the relevant measurements, are stronger than steel, carbon fibers and even diamonds.

Unlike diamonds, buckytubes can sometimes conduct electricity. This has been suspected since 1991, but it had not, until recently, been put rigorously to the test. A few months ago Dr. Ebbesen decided do so. He worked with Henrik Lezec at Micrion Europe GmbH, a firm in Munich. Together they were able to attach four tiny electrical leads to nanotubes, using a technique similar to that with which electrical circuits are laid down on silicon chips. They announced their results in July. Some tubes, they discovered, conduct as well as metals – that is, very well indeed. Others, whose carbon atoms are arranged differently, are superb insulators – only one millionth as willing as their conductive cousins to pass electrons between their atoms.

To make such a discovery useful, buckytubes must be able to be manufactured reasonably easily. Dr. Smalley thinks he can do that now. Instead of making nanotubes with an electric arc using graphite electrodes, which produced nested concentric tubes, Smalley is vaporizing graphite with laser beams. This produces bundles of single nanotubes, most having the same diameter and the correct geometry to conduct electricity. This is a distinct advantage to researchers. But, at one gram of nanotubes per day, production won't be big business quite yet.

Summary by D. Torres

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## UTAH - ACADEMIA AND FUTURE ENERGY

Hal Fox, "Academia: Your Role in Future Energy," *Frontier Perspectives*, vol 5, no 2, Sp/Su 1996, pp 46-48.

### SUMMARY

With world energy use on a constant rise, the ways in which that energy is produced is of utmost importance. The acceptance of clean commercial new energy systems will begin to enable all cultures to acquire the same technological advantages, without the current increase in pollution. Acceptance of these new energy concepts and devices has been hampered by the obdurate academic denial of observed experimental results which are contradictory to the current (current since last century) scientific dogma/theory. Presently on-going research and commercialization of these new systems will put the lie to old theories which seriously need reevaluation. The entrepreneurs will pay heed to the adage, "Fight it and Die. Accept it and Live. Lead it and Prosper." But, will the academics?

Summary by D. Torres

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## INDIA - HERBAL PETROL

from Dr. M. Srinivasan

"School Drop-Out Stuns IIT Scientists by Creating Water-Based 'Herbal Petrol'," *Indian Express*, 6 Sept. 1996.

A high school dropout from Tamil Nadu created history yesterday, when he turned water into a petrol-like fuel by mixing it with a herb he discovered in the hills.

Scientists witnessing his demonstration at the Indian Institute of Technology (IIT) said they were baffled. "It is incredible but true," exclaimed IIT chemist N.K. Jha who organized the experiment at the request of the Department of Science and Technology. (DST)

What this discovery means is that, given the herb, one can convert plain tap water into a fuel that can drive a vehicle. In fact 30-year-old Ramar Pillai who discovered the amazing herb seven years ago has been doing precisely that in his village near Rajapalanam.

Pillai, who was invited to Delhi by DST secretary Valangiman Ramamurti, says his herbal petrol would cost Re 1 per liter. All he wants from DST is money to put up a plant in his native place and personal protection. He recently faced an attempt on his life for refusing to part with his secret.

I am personally convinced it is a discovery worth pursuing," said Ramamurti after repeating the experiment himself. The product burnt with a sooty flame, smelled like kerosene and on distillation yielded a pure hydrocarbon fraction with boiling point of 170 °C.

"We have no doubt that we are sitting on something very big," Ramamurti said. "But we must proceed carefully and systematically."

He said the DST has assigned the highest priority to get Ramamurti's invention patented. The department has also acceded to his request for funds to erect a 300 liter per day pilot plant at Rajapalayam. [75 gallons/day]

Simultaneously, the best scientists in the country are going to be assembled to analyze the chemical process in detail before setting up a plant with a production capacity one million liters herbal fuel per day, Ramamurti said. Defense science adviser A.P.J. Abdul Kalam has been briefed and he is reportedly "excited."

Ramamurthi said the economic implication of his discovery for the country being so enormous, he has decided to keep Science Minister Yoginder Alagh and the office of Prime Minister H.D. Deve Gowda informed about the developments.

As a eighth class student, Ramar realized the value of the plant during a picnic in a forest when a flying spark from the cooking stove set a leaf of a near-by plant on fire. He almost forgot about this strange event of a green leaf catching fire but ten years later he tracked down the plant and started experimenting with it.

To produce petrol, leaves and barks of this plant are cooked for about ten minutes in hot water. The mixture is cooled and stirred after adding a little salt, citric acid and a trace of a few unknown chemicals. Once allowed to settle the liquid fuel, which is lighter than water, floats to the top and is separated by filtering. The entire process takes less than 30 minutes.

According to DST, laboratory tests conducted with earlier samples have conclusively shown that the herbal fuel is a pure hydrocarbon similar to kerosene and diesel. Engineers at IIT in Mafras who conducted static tests in two-stroke engines concluded that the herbal fuel offered better fuel economy than petrol, and that it "will have good potential in a four-stroke petrol as well as diesel engines."

Scientists say that while there is no doubt about generation of liquid fuel, they are not able to explain the source of carbon necessary to make the hydrocarbon. They are also surprised by the extreme speed of the process.

One possible source of carbon, according to Ratna Choudhury of IIT, is atmospheric carbon dioxide that is probably sucked in during the reaction. Combining with hydrogen liberated from water it can form the hydrocarbon fuel. "Right now it is only a guess," she said.



Inventor Ramar Pillai of Tamil Nadu demonstrating the conversion of water into petrol using a secret herb at the Indian Institute of Technology in Delhi.

**INDIA - ENERGY FROM WATER**

M. Srinivasan (Physics Group, Bhabha Atomic Research Center, Trombay, India), "Cold Fusion: Promising New Source of Energy from Water," *Physics News*, bulletin of the Indian Physics Association, vol 27, no 1, March 1996, pp 48-52.

**AUTHOR'S INTRODUCTION**

I can almost hear the reaction of typical "establishment scientists," "Oh No! Not again! I thought cold fusion was dead and buried years ago!" Most physicists had convinced themselves that the claims of two "crazy chemists," that they had succeeded in causing nuclear fusion reactions at room temperature using only a car battery and test tube electrolytic cell, were mistaken and erroneous. They simply dismissed it as "bad science." The French physicist Pierre-Gilles de Gennes, recipient of the 1991 Nobel prize for physics who was in India a few months ago, is quoted as having told an Indian journalist "Cold fusion exists only in the minds of over-enthusiastic scientific workers and in media person's minds." On the other hand, Nobel Laureate Julian Schwinger, who was one of the foremost theoretical physicists of our time, was among the first to endorse cold fusion, and in fact resigned from the American Institute of Physics in protest, when they formally dissociated themselves from the phenomenon of cold fusion.

**AUTHOR'S CONCLUSION**

Cold Fusion research is relatively very inexpensive. But it does demand something which seems to be in short supply, namely "open mindedness" and a readiness to concede that science progresses through surprises. It is high time that the Indian Scientific community and Indian Industry wakes up and joins hands to foster indigenous development of this technology. Otherwise, I am afraid this new technology is going to enter the country through the multinational route and capture the Indian market in a big way within the next decade, sidelining the Indian Scientific Community completely.

**JAPAN - TNCF MODEL ANALYSIS**

Hideo Kozima (Dep. Phys., Fac. Sci., Shizuoka Univ., Japan), "An Analysis of Experimental Data Using the TNCF Model," *Cold Fusion*, issue 18, August 1996, pp 30-39, 1 table, 35 refs. Presented at 3rd Symp. of Basic Research Group of New Hydrogen Energy Project, July 3-4, Tokyo.

**AUTHOR'S SYNOPSIS**

The TNCF model, which I proposed three years ago, was used to analyze the typical quantitative experimental data reported over the seven years since the discovery of the cold fusion phenomenon, i.e. the generation of the excess energy and the nuclear products which were unexplainable by the usual physical and chemical processes occurring in solids with hydrogen isotopes.

The fundamental assumptions of the model: the existence of stable thermal neutrons trapped in cold fusion materials and their fusion reaction with the lattice nuclei at the boundary region, were verified by the success of the analyses. Furthermore, the success of the model has given a consistent interpretation for the wide-spread spectrum of results and the strangeness of the phenomenon, which is unexplainable from the viewpoint of conventional nuclear physics, solid state physics and electrochemistry.

Predictions for the new phenomena are given which need to be tested experimentally.

**JAPAN - TRANSMUTATION EVIDENCE**

Hideo Kozima, Masayuki Ohta, Masahiro Nomura, Katsuhiko Hiroe (Dep. Phys., Faculty Sci., Shizuoka Univ., Japan), "More Evidence of Nuclear Transmutation in Cold Fusion Experiments," *Cold Fusion*, issue 18, Aug. 1996, pp 12-16, 11 refs.

**AUTHORS' ABSTRACT**

Experimental data of a cold fusion experiment measuring excess heat, neutron emission and distribution of minor atoms D, Li, Si and Al in Pd cathode are analyzed on the trapped neutron catalyzed fusion (TNCF) model. A consistent explanation of the data is given, including nuclear transmutation of Al into Si by absorption of the trapped thermal neutron.

**JAPAN - NUCLEAR POWER TOMORROW?**

Courtesy of Dr. Peter Glück

T. Kanoh (Managing Director, Tokyo Electric Power Co.), "Is There a Tomorrow for Nuclear Power Generation?," *Nuclear Energy*, vol 35, no 3, June, 1996, pp 143-154, 13 refs, 14 figs, 4 tables.

## AUTHOR'S ABSTRACT

Critical comments are publicly made about nuclear power generation and the nuclear fuel cycle. This criticism is directed at three areas of concern: accidents, radioactive waste disposal, and proliferation of nuclear weapons. In addition, there are other comments that ask 'Why are there countries pushing for nuclear power generation when other countries around the world are giving it up?' and 'Will further efforts to develop new energy sources and energy conservation not eliminate the need for nuclear power generation?' Such critical comments appear in some media more often than those expressing other opinions. Is there really no tomorrow for nuclear power? This question is studied below.

## EDITOR'S COMMENTS

Kanoh lists three things that are likely to happen in the now to 2050 time period: 1. There will be a sharp population increase. 2. There will be an increased energy demand. 3. A warning will be given against the use of fossil fuels. In discussing these issues, Kanoh points out that sometime in the 21st century China's population will likely be consuming as much oil per capita as Japan now uses, which means that China will be using more oil than the U.S. and the European countries combined.

Kanoh then cites the three scenarios of P. Beck: 1. The phase out of nuclear power. 2. The gradually small increase in nuclear power. 3. Considerable increase in nuclear power. **It is important to note that in an 11-page article about future power generation there is scarcely any mention of the development of new methods or sources of producing energy!** Readers of this newsletter would be astonished if there were not dramatic scientific advances in new scientific and technological methods of producing energy within this decade of the 90s. We are surprised at the lack of knowledge concerning new-hydrogen energy, solid-state devices, and new super magnets making possible super motors. These three new sources of thermal, electrical, and mechanical energy are most likely to be commercialized during the remainder of this decade.

T. Kanoh has made a very important point: **Don't sit back and wait for some scenario to happen. Try to make the most desirable scenario happen.**

## JAPAN - CATHODE SURFACE MODIFICATION

Keiji Kunimatsu (Imura Japan Co., Ltd., Sapporo, Japan), "Surface Modification of the Cathode in the Study of Cold Fusion," *Hyomen Gijutsu*, vol 47, no 3, (1996), pp 218-22, 12 refs.

## AUTHOR'S ABSTRACT

A review on relations between D absorption on Pd cathode and excess heat, measurement of the absorption, and surface modification of Pd cathodes with thiourea for increase of the absorption.

## RUSSIA - FOURTH RUSSIAN CONFERENCE ON COLD FUSION AND NUCLEAR TRANSMUTATION

by Yu. Bazhutov, Chairman of RCCFNT-4 Organizing Committee, and V. Koretsky, Deputy Chairman of the same committee.

The Fourth Russian Conference on Cold Fusion and Nuclear Transmutation (RCCFNT-4) took place in Dagomys near Sochy (OLIMPISKY tourist hotel) on May 19-26, 1996. The Conference was organized by ERZION Scientific and Research Center (SRC) of Physical and Technical Problems. It was held under the aegis of Russian Academy of Science, Russian Physical Society, Russian Chemical Society, Nuclear Society of Russia. State Committee for High Education of Russia and Moscow State University.

SRC "Krystal" was the sponsor of the Conference. The Proceedings of the previous Conference (Sochy-95) were published by "VENT" Scientific and Technical Center and the Russian Institute of Interdepartment Information.

Thirty participants who represented Russia, Ukraine, Belarus, USA and Japan took part on the RCCFNT-4. Russia, Ukraine and Belarus were represented by the main research teams of Moscow, Tomsk, Podolsk, Volgograd, Minsk, Kharkov and Lougansk. Foreign countries were represented both by scientific centers (SRI International, Stanford, USA; Shizuoka University, Tohoku University, Japan) and the commercial firm "Honda" of Japan.

Twenty eight reports covering the results of theoretical (10) and experimental (18) works were presented at the Conference. On the closing meeting the general discussion took place where the high level of the presented reports was stressed.

In spite of the fact that Russian CF researches received no financial support from the government last year, many new rather interesting results were achieved since the time of the last Russian CF Conference (Dagomys-95). In experimental works, the registration of neutrons (I. Chernov, Yu. Bazhutov), gamma rays (A. Lipson, A. Karabut, I. Chernov), protons and alpha-particles (J. Kasagi), as well as new isotopes which were absent in the beginning of experiments - tritium and radiocarbon (Yu. Bazhutov), silver and palladium (I. Savvatimova) - were reported. The experimental procedures were quite different.

An absence of the special-purpose CF financing may result in the loss of priority of Russian science, in falling behind in the field of new technology and creation of new energy sources, as well as in the loss of qualified scientific teams and specialists in this branch of science.

The experiments were carried out in the high-current glow discharge (I. Savvatimova, A. Karabut), with heavy water electrolysis, using tritium saturated Pd cathode (R. Stukan), in Pd/PdO heterostructures, which were electrolytically saturated with deuterium and placed into the oxygen atmosphere (A. Lipson), on the deuterated titanium target exposed to 150 KeV deuterium beam (J. Kasagi). During the operation of YUSMAR hydro-power unit with various working fluids (Yu. Bazhutov), on electrolysis of high temperature proton conductors (A. Samgin), and for deuterated oxidic bronze in the gas-phase (K. Kaliev). The excess heat which could be several times as much as the input energy applied to the samples was observed in a number of above mentioned experiments (M. McKubre, A. Karabut, A. Lipson, A. Samgin). In this connection it is well worth noting the methodic report by N. Khokhlov, which pointed to possible errors in estimating the excess heat in electrolysis. I. Samoilenko was the first to report at the Russian CF Conference the results bearing witness to nuclear transmutation into microbiological structures. **He managed - with the help of the Mössbauer spectroscopy - to observe the production of Fe<sup>57</sup> isotopes in bacteria and yeast cultivated in the MnSO<sub>4</sub> and D<sub>2</sub>O medium.** A. Koldomasov presented some additional information to his report at the previous Conference on the measuring of electric and radiation fields which are brought about when superclean distilled water flows through a small diaphragm (about 1 mm dia.) at high pressure (about 80 atm).

Among theoretical reports there were presented some additions and refinements to the models that aspire to

completely describe CF (H. Kozima, N. Samsonenko {Bird-Vigier model}, L. Sapogin, Yu. Bazhutov) as well as to explain some experimental results (V. Shadrin, V. Mayorov, V. Filimonov, A. Bulyga, J. Waber, A. Lavrenev).

The participants of the Conference confirmed the importance of the further investigation of CF, voiced the general opinion in favor of organizing the next CF Conference in 1997, and supported unanimously the proposal of the RCCFNT-4 Organizing Committee to appeal to the ICCF Organizing Committee for holding the forthcoming ICCF-8 in Russia in 1999.

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### QUESTIONS FOR THE NEW HYDROGEN ATOM

Millennium Twain

16 August 1996

- 1) At low velocities and densities, what is the dynamic vortex topology of Hydrogen? [size, shape, spin directions, charge, magnetic moments, gravitic pressure, frequencies and amplitudes]
- 2) Is the proton internal to the electron? Separate from? When? What are their corresponding sizes, topologies, dynamics, etc.?
- 3) What are the proton and electron's charge relationship? In what configurations, sizes or inertia levels?
- 4) How does hydrogen's topology change with inertia levels?
- 5) How does the low velocity/density hydrogen atom link with other electrons, protons and atoms? [shape, spin, orientation, distance, frequencies, etc.]
- 6) At typical interplanetary velocities, how does all of the above change? What new numbers or qualities?
- 7) Inside the Sun, and near-stellar environments?
- 8) In near C (light-velocity) environments?
- 9) In super-C environments?
- 10) In optical-quasar galactic cores?
- 11) What topological dynamics produces the 21cm emission? How does it change with velocity, density, etc.? Is it really produced by neutral hydrogen atoms? What then? [numbers, frequencies, etc. of both source and emission]



12) What topological dynamics produce other hydrogen emissions? [numbers, frequencies, etc. of both source and emission]

13) Implications/predictions for other atoms, the molecule, and nuclei? Hydrogen molecule, deuteron, di-proton, di-neutron, triton, 3-helium and 4-helium?

14) Other?

## Experiments for you

### SIMPLE HOME IONIZER EXPERIMENTS

James Edward Hartman (937 Delaware Place Highland, IN 46322-3326)

Parts for the required for simple experiment.

- 1) Pollenex 1701 Home Ionizer with a 555 Timing Circuit.
- 2) 10,000 Ohm or greater earphone disc (See NOTES)
- 3) Connect center electrode wire from the disc to an ionizer pin.
- 4) Connect the outer ring of the disc to a furnace ground or other good ground.
- 5) Suspend disc (pendulum) for observation. No two earphones work the same. Find the one that works best before testing.
- 6) Both wires should be loose to enable free movement.
- 7) Some tests may be conducted with wires next to each other if an air gap discharge point is used such as ground or ion emitter, separation is preferred for pulse propulsion tests.

Fig. 1 & Fig. 2 are a general set-up schematics.

In Fig. 3: The disc in discharge shows propulsive motion. Please note that the erie flashing/arcng. This occurs about once or twice per second. (Higher voltage arcing occurs at timed intervals.) Its color is ultraviolet. Lighting-like spiking does occasionally occur.

#### NOTES:

I have noticed the earphone gains weight with the earphone cover remaining around the disc. Do to the risk imparted to a digital weight scale. I recommend a non-electric scale be used to confirm my discovery.

This weight remains even without a discharge point. Every object I tested, be it Human or a simple non-conductive wooden rod, did attract to the ionized ear phone disc regardless of it being grounded or not at ranges not exceeding 4 cm it will move. At 2 cm the

earphone flies into the test object and sticks until the ion supply is turned-off or is batted off by another external force.

The earphone will stick to a cement floor like glue, this may be an attractive and elastic effect.

I have pulled wires off trying to remove it do to the great force. I conducted drop tests and confirmed accelerated falls under charge as the earphone gets closer to the cement floor, definite acceleration!

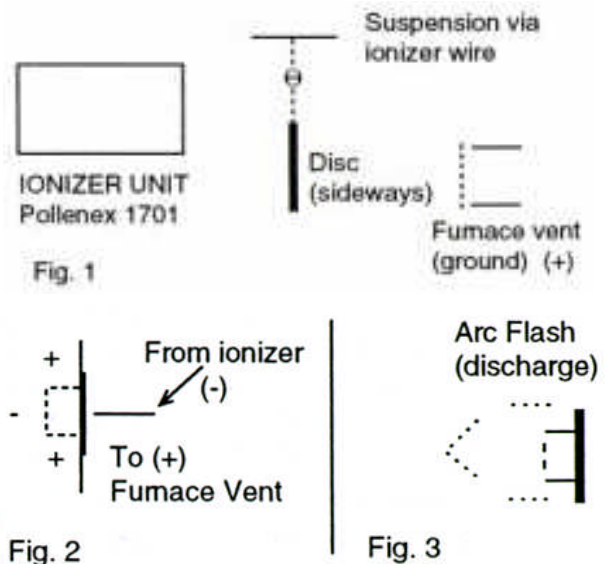
The human part, I discovered, is not very pleasant, attractive or force/acceleration test.

I suspect the spiking discharges may be giving off x-ray and ultraviolet light, these may do great damage to your eyes over time. Protective glasses and shielding in bigger ion units are recommended.

The Pollenex 1701 Home ionizer gives off 800,000 negative ions per cubic centimeter under normal usage. These tests may build that number accumulatively over time, depending on wire thickness, or type and wire length.

Also plate size i.e. the earphone diameter should make a noticeable difference.

Any home ionizer has the potential to produce RF burns even through protective gloves. Electrical Gloves are recommended but not totally full proof over longer periods. The ions tend to ride a few centimeters above (traveling along) the wires and then spread outwards.



Over time saturation of the negative ions will build-up slowing or stopping the pulse propulsion i.e. electron

flow. Too few holes on the positive ground side of the plate i.e. too few positive ions results in no working propulsion system.

If you introduce a 1 cm air (arc) gap between ground after a minute of charging the earphone. It will rotate slightly and swing a short distance like a pendulum. I have seen swings up to 2 inches at times with slight twists.

#### A Unique Experiment

If you place a pop can 3 inches away from the ear phone after about 20 seconds the pop can and pendulum like earphone will come together and push apart sometimes up to 5 inches the first time and come together again a second time with only a 2-or-3 inch push.

In this test the earphone must not have a direct positive ground. The pop can will be the ground tied to the furnace vent.

The test using the pop can and earphone seem to work only once.

However, with a 1 cm air (arc) gap this reaction will happen over and over again in over longer periods at sporadic frequency, weaker push pull strengths.

#### Steel Houses

Another test can be conducted if you have steel siding on your house, the ear phone will push and pull over and over again up to 2 inches of swing i.e. attract and repel over and over again. In this case the push is greater than the pull. Plus, you can hear occasional hissing ions and the snap of the discharge electrons when house meets earphone in the inward phase or attractive phase of the swing.

#### Another Discovery

Another neat discovery I made was with heart monitor pads, they act as a natural speaker. They allow a person to hear the dynamic hissing as with the build-up of negative ions and snapping of the electrons flowing between or breaking away from them. I discovered heart monitor pads have attractive properties. I plan to buy some for testing, in the future. The total use time of an HMP is under 1 minute. They heat-up, and burn out.

**It maybe a world exclusive: this discovery to hear charges in their natural state without using an amplifier, just pure natural ion and electron sounds in their natural condition. Believe me they sound surreal.**

[Unless I'm mistaken, these experiments are a sophisticated form of the old pith ball, glass rod, cat's fur or sealing wax and silk (or wool?) that was the typical high school demonstrations of the electrostatic forces of **50 years ago**.

Readers: Please try these experiments and write us. Ed]

## Book Reviews

### PERPLEXED ABOUT COLD FUSION?

[A Dialogue on Chemically Induced Nuclear Effects: A Guide for the Perplexed About Cold Fusion](#) by Nate Hoffman, 1996, American Nuclear Soc. Pub., 223 pages. Reviewer: Bruce Lewenstein (Cornell University, Cold Fusion Archive).

This book is neither a traditional technical explication (which doesn't exist in textbook form for cold fusion) nor a conventional overview (which has already been done several times). Instead, Hoffman models the book on some classic texts in solid state physics by Hume-Rothery, written in dialogue form, with an "Old Metallurgist" and "Young Scientist" engaging in an extended conversation about cold fusion, the technical questions it raises, the available information to resolve those questions, the uncertainties remaining in the field, and various other related bits of information.

Hoffman does seem concerned, primarily, with some of the artifacts that bedeviled cold fusion, making skepticism look like the normal response. But, as he points out; errors and oversimplifications are rife in both positive and negative experiments in the early days of cold fusion. He also emphasizes the fact that the continued observation of apparently anomalous results will not go away; scientists have an obligation to explore and explain those results. His appendices help provide background for those explorations, covering various cold fusion systems, nuclear reaction products, measurements, and branching ratios for d+d fusion at low energies.

While Hoffman's focus is the technical complexity of cold fusion, he also makes clear some of the psychological and sociological conundrums that complicate the field. Overall, the book contains substantially more detail than any of the news reports or other books on cold fusion; at the same time, its dialogue form allows the book to provide more background explanation than most

technical papers. The book concentrates on the early period (although the author has some information through 1995) and predominately looks at the heavy water experiments. Thus, it cannot be considered an absolutely complete explanation of the science of cold fusion. Cold fusion is still an evolving and expanding field.

Toward the end of Nate Hoffman's review of the cold fusion saga, he compares the saga to Edgar Allen Poe's "The Telltale Heart" story: The protagonist is sure he has killed his victim and interred the body, but he still hears the beating heart, and it drives him crazy. Critics of the 1989 announcement by Fleischmann and Pons, that they had found a method for inducing nuclear fusion at room temperature with tabletop electrochemical techniques, must feel the same way.

**No matter how hard they try to kill cold fusion,  
they keep hearing its muffled heartbeat.  
Hoffman's book explains why  
cold fusion will not die."**

## LETTERS

### LETTER BY GENE MALLOVE, Excerpt

Gene Mallove (Editor, *Infinite Energy*), "Cold Fusion Vindication?" letter printed in *C&EN*, June 17, 1996, pp 93-94.

Ron Dagani's Science Insights column, "Cold Fusion Lives - Sort Of," (*C&EN*, April 29, page 69), about the magazine I edit, *Infinite Energy: Cold Fusion and New Energy Technology*, raises the question of whether we are at the cutting edge, or - as Dagani suggests - maybe "over the edge."

Is a science over the edge - whatever that means - when international scientific and industrial conferences in Japan, the U.S., Europe, China, Russia, and India continue to convene to discuss a range of anomalous excess energy and nuclear effects in presumptively chemical systems that have now been made 100% repeatable? Your readers might wish to know, for example, that the 6th International Conference on Cold Fusion will be held in Hokkaido, Japan, Oct. 13-18, under the auspices of Japan's New Energy & Industrial Technology Development Organization. This agency

announced last year that it will spend \$100 million over the next four years on new hydrogen energy - the official term for cold fusion in Japan.

Is science over the edge or just plain cutting edge when the University of Illinois' George Miley, who is editor of the American Nuclear Society's respected peer-reviewed journal *Fusion Technology*, regularly features cold-fusion articles in his publication?

Dagani doubts that any of what we regularly report in *Infinite Energy* has appeared in "top-tier scientific journals." He ignores references to articles on cold fusion and new energy that have appeared not only in *Fusion Technology*, but in peer-reviewed journals such as *Physic Letters A*, the *Journal of Electroanalytical Chemistry*, the *Japanese Journal of Applied Physics*, the *Journal of Physical Chemistry* and the *International Journal of Hydrogen Energy*, to name but a few.

Eugene F. Mallove  
Editor-in-Chief *Infinite Energy*

### LETTER FROM ZENERGY

Reed Huish, President & CEO, Zenergy  
17 September 1996

#### Searching for Advanced Energy Technologies to Commercialize

We are at the beginning of a revolution in our society, one that will transform us from a hydrocarbon society to a pollution-free and fuel-less paradise.

Zenergy Corporation was formed by two other partners and myself to be the instrument in commercializing revolutionary technologies, thereby positively transforming our environment, the economic well-being of people in both developed and developing countries, and hopefully fan a wind of change in political circles worldwide. It is our first dream to help create an energy revolution which will have profound humanitarian benefits.

We have a strong foundation in Asia, with access to substantial contacts and capital, which will not allow these technologies to be suppressed as many have been in the past, but to be brought forth on a global scale for the benefit of all mankind.

Reed Huish, Zenergy  
390 South Robins Way, Chandler, AZ 85225  
(602) 814-7865 Fax: (602)-821-0967  
Email: [info@zenergy.com](mailto:info@zenergy.com)

## LETTER FROM C. WARREN HUNT

Dear Hal,

I have been pondering the consequences of some of Robert L. Carroll's observations on physics and have written out my conclusions, which I think you may like to print. I enclose them.

Aether and the Origin of Petroleum  
by C. Warren Hunt

Robert L. Carroll in his paper, "Star Flight Unlimited" (unpublished), poses the following propositions:

*The concept of empty space is most unfortunate. As applied to space, the concept of "nothing" has no meaning. If space exists, it must have a reality of existence. Space can have no existence apart from the mass that determines it. Since the mass object is finite, so is its space. Matter and space are opposite aspects of the same creation.*

*Since the space is given the negative aspect, it must be tensional but equal in its energy to that of the solid earth. This leads to the requirement that the energy density of space falls off inversely as the fourth power of radius vector. The fact that space has certain characteristics as an atmosphere cannot be avoided.*

*If we define space on the basis of energy density, we must have an energy density present. Since the energy is certainly not kinetic, we conclude that space has no meaning aside from that of a potential energy field.*

*The fact that planetary electrons radiate photon energy in making transitions to lower orbits is sufficient to identify the atom as a thermodynamic system.*

Thus, Carroll defines "space" not as vacant distance between material objects but as the negative equivalent of material objects.

Carroll describes "space" as an aspect of matter, an essential part of all material objects, cloaking them in the manner of an "atmosphere." Space should then exhibit viscosity and density that vary with proximity. This is a formula for an energetic "aether" at the atomic level.

In a transition of an electron to a lower orbit the volume of the atom and its aether are reduced and energy in the form of photons or heat is released. To expand the volume of an atom and its aether by the transition of an electron to a greater orbit, energy must be absorbed.

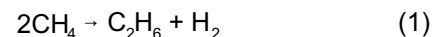
Energy radiation and absorption in this manner are thermodynamic processes, although atomic level reactions have never previously been treated in this manner, according to Carroll: "There has been no progress in the field of thermodynamics for about two hundred years."

Now let us consider a very practical application of this knowledge. Research into the origins of petroleum has for over a century been dominated by the "fossil fuel" theory. This is the theory that petroleum is a derivative of fossil animal biomass. There is an enormous mismatch in nature, however, between the known distribution of petroleum and the distribution of fossil biomass. The most obvious mismatch is in the 120 or more oil fields that produce from granite and volcanic rocks, which contain no fossil biomass at all.

As a consequence, I developed an alternative theory based on the observed fact that the entire earth emits methane that must be sourced deep in the planet. My theory holds that petroleum originates with micro-organisms in the upper levels of the crust, which seek energy for metabolic use. The organisms strip hydrogen from methane, creating anhydrides. Petroleums of various kinds produced in this manner can be regarded as mixtures of anhydrides of methane.

Thermodynamics has been raised as an argument against the anhydride concept because, it is held, the evolution of larger molecules from smaller ones requires input energy for which there is no apparent source. I disagree that there is no energy source.

The transition of an electron from an outer to a lesser orbit reduces the atom and its aether accompanied by an emission of energy. Expansion of atom and aether require absorption of energy. If size reduction for molecules is accompanied by energy release and size increase for molecules is accompanied by energy absorption as with atoms, these processes would satisfy the aforesaid objection to the anhydride theory based on thermodynamics. Let us consider the energetics of two simple reactions to see whether the molecular systems should work like the atomic systems. First let us break a hydrogen atom away from methane to allow the formation of ethane, and then let us oxidize hydrogen:



In reaction (1) ethane is a larger molecule than the original methane and thus requires energy to put it together. Hydrogen is a smaller molecule than methane and should give up energy when separated from methane. **If the energy output from the produced**

**hydrogen exceeds the energy input for producing ethane, the micro-organisms succeed in their effort to scalp off what energy they need.**

In reaction (2) the oxygen molecule is larger than the resulting water and energy is given off with the size reduction. The hydrogen molecule is smaller than water and takes energy to be tied up. **If the energy output from the oxygen exceeds the energy input to the hydrogen, the micro-organisms succeed again in scalping off what they need.**

These energy transfers are major natural processes in the production of petroleum and primary water.

[Readers: We have received an unpublished book manuscript representing the life's work of Robert L. Carroll. Would you like to have this book published? Let us know. Ed]

## Meetings

### Date Change for Conference

#### **THE GERMAN ASSOCIATION OF VACUUM FIELD ENERGY**

had planned a conference in the Singapore Hyatt, Singapore, in early October 1996. **This has been postponed until September or October of 1997.** Inquiries may be directed by Fax to Germany: (05 11) 31-84-17.

#### **INTERNATIONAL SYMPOSIUM ON CONSCIOUSNESS, NEW MEDICINE AND NEW ENERGY**

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

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

Contact: Mr. Tetsu Nagano, Japan Green Cross Society

10F Takanawa-chuo Bldg.  
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Dr. Shiuji Inomata  
2-2-2 Sekigawa-cho  
Arai-shi  
Niigata 944, JAPAN  
Tel/Fax: +81(0)255-72-0558

### **ICCF6**

#### **Sixth International Conference on Cold Fusion**

will be held 13-17 October 1996  
Hotel Apex Toya, Hokkaido, Japan  
Conference Secretariat:  
Tel +81-3-3508-8901  
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 on the following topics:

- Excess Energy Phenomena in D<sub>2</sub>/Metal Systems
- Correlation Between Excess Energy and Nuclear Products
- Nuclear Physics Approaches
- Material Science Studies
- Innovative Approaches (Miscellaneous Phenomena)

## Commercial Column

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

### COMPANY: PRODUCT

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

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

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

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

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

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

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

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

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

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

**Magnetic Power Inc.:** Supermagnets and supermotors; Solid-state, heat to electric transducers, for temperatures up to 300°F (cold fusion, waste heat, etc.). Featuring Ultraconductors™ under development by ROOTS, a subsidiary. 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.

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

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

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

## INFORMATION SOURCES

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

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

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

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

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

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

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

**\*\*News Just In\*\***

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

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

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

**Institute for New Energy (INE), organization to promote and help find funding for new energy research.** Home Page: [www.padrak.com/ine/](http://www.padrak.com/ine/) contains many important scientific papers and current reports on all areas of research.

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

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

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

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

*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 on nuclear fuel wastes disposal. Discusses transmutation as one possible solution. \$5 U.S. and Canadian, \$7.50 other countries.

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

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

**ELECTRIC AUTO BY G.M. READY**

William J. Cook, "Look Mom, No Gas", *U.S. News and World Report*, Sept 30, 1996, pp 52-54.

**EDITORS' SUMMARY**

You can only buy this new car in warm climates, especially Southwest and southern California, and then only after you have been interviewed. Oh yes, you will also need to have about \$35,000 in ready cash and understand that the trade-in value may be small. Other than that, you get a great car, lots of pep and zip, fast acceleration and only needs to be recharged every 60 to 80 miles.

This is an excellent article about how public laws are encouraging the automakers to provide something besides a fossil-fuel burning/pollution internal-combustion engine. This is a forerunner of a lot of electric vehicles in our future. Only a couple of problems to be solved. However, we engineers are known for our ability to solve problems. The two biggest problems are that we need better batteries and a better way to charge the batteries. Alternatively, we need a better way of producing or storing electricity for electric vehicles.

As the readers of this newsletter know, we have been working on technologies that we hope will greatly improve the electric motors for electric vehicles. We are ready to cheer and applaud the Takahashi super motor, if we ever get an independent and positive evaluation. We are also ready to cheer and applaud anyone who will come up with an on-board battery charger that taps the energy of the environment or uses low-energy nuclear reactions that will provide recharge power.

After we demonstrate that Hal Puthoff's "One-Watt Challenge" has been met and exceeded, let's get cracking on that on-board battery charger. Our basic rough calculations say that we need a one kilowatt charger for the "round-the-town" driver and a five kilowatt charger for the long-distance driver (in a small car). **Anyone out there ready to help General Motors?**

There are two **Sciences**, the science of the past and the science of the future. (Plagerized from Ralph Waldo Emerson's version.)

**NEN's** readers deal in the Science of the Future!

Our thanks to Peter Glück for this tidbit.

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## NOW AVAILABLE

### *Journal of New Energy*

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

The *Journal of New Energy* is a new professional journal publishing peer-reviewed professional papers devoted to new-energy experiments and theories. This journal is devoted to rapid review and publishing of important new-energy papers. The price for this quarterly journal is \$150 per year with each issue airmailed (single copies \$45). The journal is abstracted by *Chemical Abstracts*, *Metals Abstracts*, and *Engineering Information*.