

# FUSIONfacts

A Monthly Newsletter Providing Factual Reports On Cold Fusion Developments

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*Fusion Facts* Now Reports on Both Cold Fusion and Other Enhanced Energy Devices.

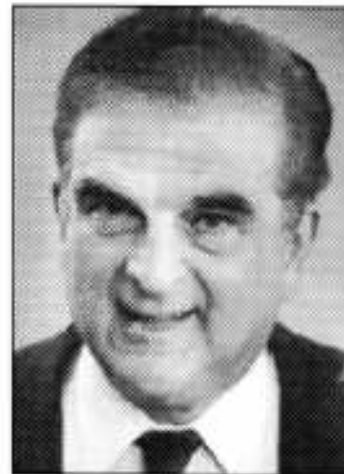
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JANUARY 1996

## *Fusion Facts* Names Fusion Scientists of the Year for 1995



DR. JAMES PATTERSON



JEROME DREXLER

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### A. SCIENTISTS OF THE YEAR

This choice is never easy when dedicated scientists from around the world are working on solving the world's energy problems. For example, Piantelli of Italy is certainly a top contender. **However, this year's award goes to one highly visible scientist and one who has remained much behind the scenes. The scientists chosen are: Dr. James Patterson and Jerome Drexler.**

By now, all of our readers know about Dr. James Patterson, the over 80-year-old scientist and his metal-plated spheres and the **Patterson Power Cell™** (also known as PPC). Not many of you have followed the trail of ingenuity developed by Jerome Drexler. So here are the stories:

## THE STORY OF JAMES PATTERSON

James Patterson is clever. He had been working with hydrides before Pons and Fleischmann made their announcement in March 1989. Therefore, Patterson was prepared by his own experimental work to add to the cold fusion technology. However, he soon learned that there had been roadblocks established in the patent office. **It gradually became apparent that no one was going to be allowed to patent a cold fusion device.** Therefore, Patterson, with his advanced age and knowledge of the patent process made two smart moves: first, he used neither the words **cold fusion** nor **excess energy** in his patent application; second, he asked for and received special treatment due to his advanced years. As a result, his application detoured the roadblocks, Patterson's patent was granted, and the PPC is now the **only real-life, working, cold fusion device with a patent issued in the U.S.**

We first saw a demonstration of the PPC at the Fifth International Conference on Cold Fusion in Monaco in April, 1995. At this conference the device was providing from two to four times the thermal power as input electrical power. In October 1995, the PPC was demonstrated to a large audience at the SOFE '95 conference of nuclear engineers. This time the device was providing seventy times as much thermal power as input electrical power. One of the criticisms was that the power gain ignored the input electrical power to the power supply and the pump energy used to circulate the electrolyte.

On December 4, 1995 we witnessed the operation of a PPC in parallel with a control unit. The same electrolyte was pumped through both the active and the control unit. This time the power input was measured at the wall socket and included all the power to the power supply, the electrolyte pump and to a cooling fan. The 84 watts of input power was measured at the same time that over 1330 watts of thermal power was being produced. **There was an applause from the attendees at this demonstration in respect for this invention of James Patterson.** For this achievement, James Patterson is named a *Fusion Facts* Scientist of the Year.

As of the time of writing, Clean Energies Technologies (CETI) is negotiating for the sale of one or two of the million-dollar licenses for the further development of cold nuclear fusion. This commercialization (the process

of selling license rights) is one of the first profit-making business achievements in this new technology. For further information please write to Jim Reding, CETI, 14332 Montfort, Suite 6302, Dallas, TX 75240. Phone (214)458-7620; FAX (214)458-7680.

## THE STORY OF JEROME DREXLER

Present at the first international conference on cold fusion, (Salt Lake City, February 1990) Jerome Drexler suggested that the likely candidate for a suspected nuclear reaction would be  $\text{Li}^6 + \text{d} \rightarrow \text{Be}^{8*} \rightarrow 2 \text{He}^4 + \text{energy}$ . This idea was also incorporated into a patent application filed by Jerry Drexler.

Later, Drexler developed this idea into another patent application wherein he disclosed an invention in which the electrolyte flows through a bed of coated particles. In this invention, Drexler claims that the nuclear reaction of lithium and deuterium can continue without the aid of electrolysis. This is the first time (to our knowledge) that an inventor had suggested that a nuclear reaction could be catalyzed without the assistance of electrolysis. In the first papers about cold fusion, considerable attention is paid to the pseudo-pressure provided by the electrolysis to force deuterium into a palladium lattice. At the present time there are no published papers that report on cold fusion nuclear reactions without the use of electrolysis. **This issue may well be decided in the near future as a further understanding of the catalysis of nuclear reactions is studied.**

Jerome is president of Drexler Corporation, a Silicon Valley company that specializes in the type of lithography that has made integrated circuits possible. Jerome is the inventor of the **LaserCard™** which has the ability to store enormous amounts of data on a card the size of a business card. This invention brought \$40 million to the Drexler Corporation.

Because Jerome Drexler submitted a patent application in which the electrolyte is pumped through a bed of particles about two years before Dr. Patterson's patent filing date, it is only proper that we recognize Drexler's foresight. **Therefore, we are pleased to name Jerome Drexler as a *Fusion Facts* Scientist of the Year.**

Congratulations to both of these inventors and to all of the rest of you who are contributing to the solutions of today's energy problems.

## B. EDITORIAL

### BARRIERS TO COMMERCIALIZATION

By Hal Fox, Editor

Three technologies are now being readied for future commercialization. These three technologies are the various forms of cold nuclear fusion; the further development of Shoulders' high-density charge clusters (HDCC); and the supermagnets/supermotors (SMSM) as best exemplified by the work of Yasunori Takahashi. It is fortuitous that these three technologies provide **thermal power, electrical power, and mechanical power**, respectively. These are judged to be the energy-producing technologies of the 21st century. It should also be noted that there may well be other technologies that will also prove to be capable of tapping the energy of space and turning this energy into useful power. The Cermet development of Dr. Winn Lambertson is an example.

The question to be addressed is, "If these technologies are sufficiently developed, what are the barriers to commercialization?" Following is a list of barriers, each of which will be addressed:

1. There are political barriers to commercialization.
2. There are scientific barriers because none of these technologies is "acceptable."
3. There are environmental barriers, such as the fear of the use of nuclear devices.
4. There are money barriers.

#### Political Barriers

All three technologies offer clean, inexpensive, and essentially inexhaustible energy. In addition, none of the three are supported by the currently accepted scientific models. The major political barrier is that which has been artificially imposed at the Office of Patents and Trademarks. Without considerable changes in the manner in which new technology is being handled in the patent office, it is unlikely that these technologies will be readily accepted. Although over three hundred patent applications have been filed for cold fusion inventions, only one real cold fusion patent has been issued. **This reluctance on the part of the workers in the Patent**

**Office to accept strong evidence of new technological discoveries is the major political barrier to the commercialization of these energy-producing technologies.** The Patent Office action is also contrary to the rights bestowed by the Constitution of the U.S.

#### Scientific Barriers

It would be interesting to adopt the oft-quoted legal phrase, "Ignorance of the Law is no excuse," and apply it to the scientific community. Ignorance of the discovery of a new "law" of science should not be an acceptable reason to delay the adoption of new discoveries. **Unfortunately, cold fusion is contrary to the known rules of hot fusion and, in addition, devices that transform the power of an energetic aether into useable power are branded as being contrary to the Law of Conservation of Energy.** Only two modest changes in the scientific belief structure are necessary to avoid all of these artificial barriers to these new technology: First is the recognition that the rules of gas-plasma physics (hot fusion) do not necessarily apply to nuclear reactions in or on the surface of a metal lattice. Second is the recognition that there is an energetic aether. **There is an energetic aether and there are devices that are energy transformers which transform aetheric energy into useful power.** There are no logical reasons to deny either the successes of cold nuclear fusion nor the successes of devices that transform the energy of space into useful power.

#### Environmental Barriers

Over two years ago *Fusion Facts* contacted the chief legal officer for the Nuclear Regulatory Commission. We were told that if a cold fusion device does not put out neutrons, then the NRC has no interest in the technology. After years of insisting that cold fusion doesn't work **because there are no measurable neutrons**, it would be a dramatic reversal for the hot fusioners to suddenly decide that cold fusion is dangerous because of the potential for producing neutrons. Under the current conditions of operation of the PPC, there have been no measurements of neutrons that are significantly different from background neutron radiation. **If suddenly there is an attack against cold fusion due to the possible harm from the emission of neutrons, then you will know that the hot fusioners, acting as lobbyists, are dedicated to destroying new technology for fear that their own funding from the**

**federal government is being threatened!** You will also know that this artificial barrier being raised against cold fusion has little or no basis in scientific fact. Therefore, we can conclude that there is a danger that artificial barriers may be raised against cold fusion. If the hot fusion scientists are wise, they will switch from being anti-cold fusion to being supporters of cold fusion. **Corporate funds will be available to support almost any reasonable activity that will provide the funder with a patentable position in this new technology.** Those skilled in hot fusion are prime candidates for cold fusion funding once they read the cold fusion literature and upgrade their considerable skills.

It would be difficult to envision a scenario where there would be any artificial barriers raised against those technologies that tap space energy or aetheric energy. Therefore, we believe that the HDCC and the SMSM technologies are essentially immune from attacks by either scientists or by the environmentalists. **If the environmentalists are wise, they will recognize that these new technologies are the discoveries that will do the most to protect the environment.**

#### Monetary Barriers

The lack of funds for the development of these three technologies is currently one of the big obstacles to the rapid growth and development of new energy systems. It is difficult, but not impossible, to sell a new technology to a corporation when their scientific advisors are telling them that these technologies, "sound like perpetual motion and are therefore against the Law of Conservation of Energy." Those battles will be fought with successful device demonstrations. **If a new energy company can go directly to the manufacturing vice president (and bypass the R & D vice president) with a working demonstration or with a manufacturing prototype, then the battle is more likely to be won.** The V.P. of Manufacturing is interested in a product, not in arguing over theory. Every major corporation that buys a license right to one of these new technologies makes the sales of the next license a lot easier. At the current time, at least one company has been verbally informed that significant funds will be invested for the commercialization of one (or more) of these technologies. If these verbal commitments are kept, then the monetary barrier will have been breached.

#### Summary

The cold fusion technology is in the process of being commercialized and the first license agreement is expected to be sold in January, 1996 (or has already been sold). The high-density charge cluster technology is being developed together with new lines of instrumentation. Commercialization is expected to begin during 1996. The supermagnets/supermotors technology is at the demonstration phase. Japanese brochures have already been printed and distributed showing the application of this new technology to a small transportation vehicle -- a motor scooter. This process of commercialization is only being slowed by the lack of a suitable plant for the production of the supermagnets. The year 1996 will go down in history as the year when new-energy technologies began to be commercialized.

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### C. NEWS FROM THE U.S.

#### *INFINITE ENERGY UPDATE*

In case you missed it, the last issue of *Infinite Energy* (Sept.-Oct. '95) contained the following:

**Breaking Through, Editorial:** CETI had a great showing at SOFE'95 in October and at Power-Gen '95 in December, ENECO announces European patent of the P&F pioneering cold fusion patent, Japan ups its funding of the New Hydrogen Energy program from \$30 million over four years to a new high of \$100 million per year. The ground breaking US Patent by Teruo Kawai, they really granted it!

**"The Penultimate Cold Fusion Demonstration -- at a Hot Fusion Meeting! ... 80/1 = Out/In,"** Cold Fusion demo at SOFE'95 by Dennis Cravens. Reported by Jed Rothwell.

**"Formation of  $^{197}\text{Pt}$  Radioisotopes in Solid State Electrolyte Treated by High Temperature Electrolysis in  $\text{D}_2$  Gas,"** Dr. Tadahiko Mizuno's Solid State Cold Fusion technical paper.

**"Can Cold Fusion be Catalyzed by Fractionally Charged Ions?"** Joseph L. McKibben (Los Alamos Nat. Lab., retired).

**"Energy Generation and Generator by means of Anharmonic Stimulated Fusion"** (The Piantelli Patent), F. Piantelli, et al.

**ICCF5 Talk** by Dr. Edmund Storms.

**"Claimed Over-Unity Magnetic Motor Awarded U.S. Patent,"** 318% Mechanical output/Electrical Input motor by Teruo Kawai: patent information.

**"Applications for an Acoustic Levitation Chamber,"** Dr. David Deak, Quantum Σonix Corp.

**"A Physicist and Apollo Astronaut Previews the Free Energy Age..."** Dr. Brian O'Leary.

**"Why All the Static?"** Jeffery D. Kooistra, a comparison of discovery and scientific thought.

**Vision 2020 "Cold Fusion: Paradigm Shifts which can Drastically Affect our Plans/Projections,"** Dr. M Srinivasan, Associate Director, Physics Group, BARC Bhabha Atomic Research Center, India.

**"Hey Buddy, Can You Spare Me a Paradigm?"**

David Moon, a review of the BBC and Canadian Broadcasting Corp.'s cold fusion documentary, "Too Close to the Sun."

**"Nucleon Cluster Structures in Beta-Stable Nuclides,"** Ron Brightsen, Clustron Sciences Corp.

**"Potapov Thermogenerator Update,"** conclusion of 3 articles discussing the YUSMAR device and its testing, various reports from Russia.

#### CALIFORNIA - REPORTS ON GMC EV

Courtesy of Trevor Osborne, reported in *The Western Australian* newspaper

The first electric passenger car to be released by a major company will go on sale in the U.S. this year, say company sources in Los Angeles. It is a 2 seater with a top speed of 120 kmh, range of power 145 km, and a price tag of more than \$47,000.

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

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

#### GEORGIA - GLOW DISCHARGE REACTIONS

C.H. Ellison, James A. Mahaffey (Georgia Tech Res. Inst., Atlanta), "An Investigation of Reports of Fusion Reactions Occurring at the Cathode in Glow Discharges," *Fusion Technology*, vol 29, no 1, January 1996, pp 178-187, 15 refs, 9 figs.

#### AUTHORS' ABSTRACT

Recent reports of deuteron-deuteron neutrons resulting from nuclear reactions in or at the palladium cathode of a deuterium glow discharge were investigated. The equipment, techniques, and experimental procedures are discussed in detail, as well as various possible mechanisms to produce such reactions. The results of this investigation do not confirm the presence of d-d reactions.

[Here is a case where close communication between experimenters and those who had previously developed the procedures could have been beneficial. A too late discussion between these authors and the earlier Russian group indicated too little attention had been given in this case to the requirement for high purity gases. --Ed.]

#### MASSACHUSETTS - NO ELECTRIC CARS?

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

#### EDITOR'S SUMMARY

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

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

**This article is a wonderful example of the whale oil syndrome.** "What can we possibly find to replace the whale oil?" was the cry when whales began to become less plentiful.

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

Example 2. Batteries have a problem. "Experience (such as with laptops) shows that claimed battery performance is about twice the actual performance." Lead-acid batteries have an energy density of about 35 watt-hours per kilogram while gasoline has about 12,000 watt-hours per kilogram. The recent development of super capacitors have led to the technological forecast of the development of improved capacitors of a similar type that will have an estimated ten times the energy storage of a lead-acid battery. **The business plan for this development would require about \$2.5 million and 12 to 18 months for moderate-scale production.**

Example 3. "...electric vehicles do not eliminate emissions--they simple move them elsewhere." "...The fuel [burned in a power plant] loses up to 65 percent of its energy when it is burned to produce electricity; 5 to 10 percent of what is left is lost in transmitting and distributing the electricity before it even gets to the electric car." The authors make no comparison with the degree of pollution control mandated for power plants as

compared to the pollution allowed by the diesel-burning cars and trucks. In addition, no mention is made of the possible use of new energy systems to charge the batteries on-board. For example, this publication has many times advocated that the future development of new technology, such as high-density charge clusters (Kenneth Shoulders' U.S. Patent 5,018,180), will provide the technology for non-polluting on-board battery chargers.

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

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

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## MASSACHUSETTS - AETHERIC HYDROGEN?

Paul E. Rowe (Mashpee, MA), "Sparks from Grinding and the Aether." *Toth-Maatian Review*, as "Hydrogen From the Ether," vol 12, no 4, July, 1995, pg 5839-43.

### AUTHOR'S ABSTRACT

When iron or iron alloys are shaped on a grinding wheel, sparks are produced. It is generally accepted that these sparks are due to reaction of the hot, fine metal particles with the oxygen of the air to produce metal oxides, heat and light. This paper will try to show that this is not the case. A more unconventional explanation will be proposed.

The author suggests that the reader test the following observations by shaping a piece of scrap iron or iron containing alloy on a bench grinder, in a darkened area. A piece of blank white paper should be placed under and around the base of the grinder to collect ground particles.

1. The sparks all have and retain the same yellowish white color until they are completely extinguished.
2. Sparks which impinge on the paper very near the grinder do not cause the paper to discolor due to their heat nor do those which travel much further.
3. Sparks, which travel parallel to the paper or higher, retain the same color glow until they suddenly self-extinguish in the air.
4. When one places ones bare hand in the shower of sparks, one is surprised not to feel any warmth, note any discoloration of the skin or detect the odor of burning flesh.
5. Very fine particles accumulate on the paper. The particles are similar in color to the original piece of metal and are strongly attracted to a magnet. The particles are much finer than one would expect based on the apparent width of the spark trails. When the particles are rubbed into the paper, they do not leave a red streak.

Now let us consider what one might expect if the accepted explanation of this phenomenon were correct.

1. The grinding action breaks the piece of metal into fine particles which are quite hot due to the abrasion involved.
2. The hot particles are thrown into the air and react with the oxygen of the air to form an oxide coating on the metal surface. The chemical reaction releases considerable energy which heats the particle to such a temperature that the particle glows. At the temperature where the glow is yellow white, the surface would be completely oxidized to the non-magnetic ferric oxide which is either a red pigment (rouge) or a black solid which produces a red streak, when rubbed on white paper. Indeed, this is a test mineralogists employ to test for ferric oxide. The magnetic  $\text{Fe}_3\text{O}_4$  oxidizes to red ferric oxide when heated to yellow white heat in air.
3. Particles which impinge on the paper close to the grinding wheel are quite hot and should discolor the paper.
4. One expects to feel discomfort when his hand is placed in the stream of sparks in the vicinity of the

wheel. One might also expect dots of discoloration on his skin and the distinctive odor of burning flesh.

5. Sparks which self-extinguish in air should lose temperature relatively gradually and the color of the spark should change from yellow to orange to red as the spark travels away from the wheel.
6. The particles which fall on the paper should be ferric oxide which is non-magnetic or metal particles coated with ferric oxide. The particle should produce a red streak when rubbed on the paper as pointed out above.

The great discrepancy between what is expected and what is observed suggests that the accepted explanation is incorrect.

This author has written several papers for this Journal [Toth-Maatin Review]. The most pertinent ones were summarized in 1991 [1]. The papers quote many experimenters (some quite well known) who have reported obtaining hydrogen gas in and from vacuum. The papers include descriptions of experiments in which the author produced surprisingly large quantities of hydrogen gas in and from vacuums of 0.020 to 5 torr. (in electrical discharges and, also, in the presence of glowing metals). The article suggests that the hydrogen is produced from a matrix of protons and electrons which fills the universe (the Aether).

The author proposes the following mechanism in an attempt to explain sparks obtained in grinding iron-containing metals:

1. The grinding operation produces fine, hot metal particles which fly through the air.
2. A small portion of the Aether at the surface of the hot particles is converted into extremely reactive monatomic hydrogen which quickly reacts with air. The overall reaction results in the formation of water and the evolution of light from the area of the reaction.
3. The conversion of Aether particles into hydrogen requires energy which is removed from and, therefore, cools the metal particle. At some point the particle becomes too cool to cause the conversion of Aether into hydrogen and the glow stops.

4. The glow is not on the metal particle surface which becomes cooler and cooler as the particle travels through the air. It is due to the chemical reaction taking place in the gas in close proximity to the particle. The color of the glow is characteristic of that chemical reaction and remains the same as long as the reaction is taking place.

5. The gas has a negligible heat capacity compared to the metal particle. Even though the temperature of the spark is quite high; the total energy is quite low. If one flicks his finger through the flame of a gas range and then onto the much cooler red-hot coil of an electric range, he will appreciate this effect.

Reference:

[1] P.E. Rowe, *Toth-Maatian Review*, vol 10, 1991, pp 4981-4990.

[Note that for Einstein's General Theory of Relativity the empty aether has to be characterized with a dielectric constant and permeability. --Ed.]

## NEW YORK - ULTRASONIC IRRADIATION

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

### AUTHOR'S ABSTRACT

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

ultrasonic irradiation in heavy water, the palladium powder becomes partially oxidized and undergoes some compositional changes.

### AUTHOR'S CONCLUSIONS

Slurries of PdD<sub>x</sub> in D<sub>2</sub>O have been subjected to ultrasonic radiation and searched for neutron emission. Scanning electron micrographs reveal partial melting of the PdD<sub>x</sub> particles due to cavitation. X-ray photoelectron spectroscopy spectra after ultrasonic irradiation show an additional peak at 78 eV and the disappearance of the 680-eV Pd<sub>3s</sub> peak. The <sup>3</sup>He neutron detector recorded some high counts during irradiation, most of which can be accounted for as background anomalism. The highest observed burst was about four times the background and cannot be explained as background, although it showed an anisotropy between the four simultaneous channels.

## WASHINGTON DC - ELECTROSTATIC BOOK

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

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## D. NEWS FROM ABROAD

### GERMANY - NEW ENERGY'S EFFECTS

Josef Gruber (Univ. Hagen, Germany), "New Energy Technologies (NET): Effects on Individuals, the Economy and the Environment," invited paper at the Symposium "New Energy" of the Scandinavian Assoc. of Vacuum Field Energy, Stockholm, Sept. 1994, second ed.



## AUTHOR'S ABSTRACT

There are new theories in mainstream physics which state that there exists a source of energy not known earlier (called zero-point-energy ZPE, space energy, vacuum field energy VFE or free energy) and that this source of energy may be tapped. Dr. Harold E. Puthoff, a theoretical and experimental physicist in Austin, Texas, USA, and his colleagues have succeeded in publishing new theories in peer-reviewed physics journals. They have also replicated laboratory experiments in which this "new" source of energy is being tapped. See also the work of Andrija Puharich (1918 - 1995) which seems to have been inspired greatly by Nikola Tesla (1856 - 1943).

In the first main section of my lecture, I inform about several new energy supply devices (generators, motors, energy converters) which draw energy from a previously unknown source. They require no traditional fuel. Most of these NET-devices have been thoroughly checked by independent experts, have been (as least partly) patented and are now subject to developmental research. These NET-devices operate permanently (24 hours per day, all year) and everywhere. Some devices may adjust their energy output instantaneously to the energy demand. Therefore, no energy storage is required and relatively small NET-devices suffice. In some NET-devices, magnetism (from permanent magnets) plays the crucial role. In others, water plays the role of a fuel: In a new type of hydrolysis, it is split into hydrogen and oxygen. In the procedures employed in NET-devices, often-referred-to concepts are: Casimir effect, sonoluminescence, condensed charge technology.

In the second main section, I take a first glimpse of the effects of using NET-devices on a large scale: By means of simple scenarios for the transportation sector and for the heat / electricity sector, we investigate effects on individual households and firms, on the economy at the national and international level, and on the environment. The main effect of NET will be a sustainable development, at least with respect to energy.

Very briefly discussed are also a few very innovative devices which produce no "overunity-effect," for example the RADIGEN-generator of Günter Pöschl/UTI for producing water-diesel-fuel mixtures for diesel engines; the MICON-machine for recycling waste in a vacuum hydrogen-plasma (of the same inventor); Yull Brown's

gas and Sonne Ward's implosion machine for greatly reducing radioactivity. Some of these devices are already commercialized and are important on their own. Others may gain their full importance, when combined with NET-devices with over-unity-effect.

**JAPAN - AS REPORTED IN RUSSIA**

Courtesy of Igor Goryachev

Sergei Agafonov (Tokyo), "They Seemingly Carried Out Nuclear Fusion at Room Temperature in Japan," *Izvestiya* newspaper, Dec. 21, 1995. Translated by Dr. Igor Goryachev.

As reported in the Japan mass media, two Japanese scientists at the University of Osaka managed to initiate nuclear fusion at room temperature by taking advantage of an original method developed by them. This sensational news immediately ignited a calm discussion about possible new directions in nuclear research known as "cold fusion."

Many scientists all over the world failed to replicate the results obtained in 1989 by American scientists, Drs. Fleischmann and Pons. Now, the Japanese success gives new hope and supports the expectations of optimists. If the Osaka method is confirmed in the course of verification experiments, it will open new great horizons for science and technology.

According to the statement of Professors Yoshiaki Arata and Setsuo Tsu [sic], it took them several years of hard work to gain the success. They used a double cathode: a palladium cylinder (charged negative) with palladium powder inside and a platinum cylinder (charged positive) containing heavy water. After they applied 5A current during several hundred hours, it was observed heat generation that lasted several thousand hours - the heavy hydrogen from platinum cylinder reacted with the palladium powder in the palladium cylinder thus initiating nuclear reactions.

In order to make sure that nuclear fusion took place (not any other kind of reaction), the scientist analyzed the composition of the used powder and discovered that it contained nuclear ash, helium-4, the concentration of which exceeded 1 to 10 million times the concentration of helium in the ambient air. The Japanese scientist said

that they replicated the experiment many times and each time the result was identical.

This information caused a storm of various opinions in the Japanese mass media because of the importance for Japan in connection with the late state of emergency at the nuclear power plant in Zurug (sic) which could have become a Japanese Chernobyl. This incident put the future of Japanese atomic power generation under question. Therefore, this new information about cold fusion success became a medication for the public wounds. Everyone now is expecting to hear the results of verification of the Osaka experiments.

## RUSSIA - MICROSPHERE PRODUCTION

Alexander A. Akunets, Valerie M. Dorogotvtsev, Yuriy A. Merkuliev, Sergey A. Startsev (Lebedev Physical Inst., Rus. Acad. Sci., Moscow), and Robert Cook (Lawrence Livermore Nat. Lab., Livermore, California), "Production of Hollow Microspheres from Solid Plastic Granules," *Fusion Technology*, vol 28, no 5, December 1995, pp 1781-1786, 11 refs, 7 figs.

### AUTHORS' ABSTRACT

Plastic microshells with diameters of up to 1.5 mm have been produced at the Lebedev Physical Institute from solid polymer pellets using heated droptower techniques. We review here the basic processing techniques, outline our theoretical understanding of the process, and present detailed surface finish characterization of several shells. Based on limited data we find that the amplitudes of the surface finish modes are larger than those observed on the smaller (0.5 mm) solution droptower shells at the same mode number. However, if the comparison is made at the same wavelength rather than mode number, the shells show similar amplitude to the solution droptower shells. This result suggests that surface roughness at a given mode may scale with shell diameter.

[This article may be of interest to those desiring to prepare metal-plated spheres for cold fusion experiments. --Ed.]

## E. ARTICLES BY READERS

### MAJOR DEVELOPMENTS IN COLD FUSION

By Dana Richard Rotegard (MCFA, Minnesota)

#### Major European Patent Grant

The European patent office has issued a Notice of Intent to grant the Pons-Fleischmann patent for cold fusion. Filed by the University of Utah in 1989, this cold fusion patent (and over 200 others) has been denied by the U.S. patent office. The University of Utah has licensed this patent to ENECO (formerly Fusion Energy Applied Technology Inc.) of Salt Lake City. ENECO's science board includes several prominent cold fusion scientists, including Dr. Richard Oriani of the University of Minnesota and Dr. Ed Storms formerly of LANL. The late Minura Toyoda, founder of Toyota Motors tried to acquire this patent filing from the University of Utah. Besides being another vindication for Drs. Fleischmann and Pons, this patent grant signals a change in official attitudes toward cold fusion science in Europe.

#### Italian Industrial Backing

FIAT sponsored a small cold fusion gathering from October 11-13, 1995, in Asti, Italy, hosting about 40 internationally prominent cold fusion researchers including Dr. Storms of ENECO. After the conference FIAT announced its sponsorship of Dr. Piantelli's cold fusion research.

#### Japanese MITI Increases Cold Fusion Commitment

The Japanese government announced an increase from \$30,000,000 to \$100,000,000 of its cold fusion R&D budget. The program is administered through MITI with labs based in Sapporo near the Toyota R&D effort and the University of Hokkaido. According to Hal Fox, editor of *FUSION FACTS*, over 100 cold fusion patents have been granted in Japan including the "ceramic" cold fusion patent of Dr. Mizuno (sponsored by Mitsubishi). Dr. Mizuno lectured at the University of Minnesota in June 1995, where ceramic cold fusion research continues under the direction of Dr. Oriani.

#### Prototype Demonstrated at University of Illinois

The University of Illinois and the American Nuclear Society convention witnessed a major demonstration

when Clean Energy Technology Inc. unveiled a 20 watt light-water cold fusion cell operating at a 70 to 1 energy profit. CETI's Drs. Cravens and Patterson demonstrated the same technology in Monte Carlo in April 1995. Dr. George Miley, the editor of the respected *FUSION TECHNOLOGY* and several University of Illinois graduate assistants monitored the experiment's calorimetry and setup. Dr. Cravens hopes to upscale this heat source to near a kilowatt and prototype an electric car battery recharger in early 1996.

### The Media Sleeps

Despite mainstream-frontpage coverage of these developments in Italy and Japan, there has been little coverage, either in print or electronic media, of these developments in the United States. "Science on Friday"s Ira Flato on National Public Radio covered the CETI demonstration. Otherwise little science news on these major developments has appeared outside specialized American cold fusion newsletters such as *COLD FUSION TIMES*, Ed. Dr. M. Swartz, *FUSION FACTS*, Ed. H. Fox and *INFINITE ENERGY*, Ed. Dr. Mallove.

[See a more complete list of publications in our Commercial Column, page 17.]

### The Cold Fusion Electric Car

Major work on Cold Fusion as a power source for electric cars is underway in the R&D labs of several major international auto manufacturers led by Toyota, the sponsors of Dr. Fleischmann and Pons lab near Nice, France. The American "Big Three" of GM, Ford and Chrysler continue to fight electric car mandates in Massachusetts, New York, and California. Quite clearly the executives of American auto companies are ignoring the example of their overseas competition who are exploiting cutting-edge scientific developments that could make internal combustion technology economically obsolete.

### Third Wave Energy Activism

Under the provisions of the Massachusetts Clean Air Act, by 1998 2% of Massachusetts' new cars must be emissionless. A variety of small companies have emerged in the so called "platinum perimeter" outside Boston to capture this market. I visited the labs of Jet Technology in Wellesley Hills in November for close talks on this subject with Dr. Mitchell Swartz. This

summer, a coalition of entrepreneurs, economic futurists, environmental groups such as MASSPIRG, and medical lobbyists such as the American Lung Association successfully defended the electric car mandates from an attempted rollback by Detroit. Cold fusion and breakthroughs in zero point energy technology make it possible that market forces will soon end the age of fossil fuel.

### **"FREE ENERGY" AS SEEN ON BRITISH T.V.**

by Harold Aspden

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

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

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

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

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

The presentation was impressive. A drum-type rotor close-fitting within a cylindrical housing had numerous holes in its surface, which presumably produced vortices

and turbulence and acted as a pump driving water through the apparatus.

"70% more energy in than out was mentioned," but a more modest figure of 108% to 110% efficiency was quoted to visitor Tom Droege of the Physics Department of Fermi Lab, who seemed open-minded, but non-committal, though satisfied that proper test equipment had been used. The "problem" it seemed was that Jim Griggs was not a scientist cast from the academic mold, so the technology had to be somewhat suspect - even though it worked!

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

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

Note that Jim Griggs did imply that the invention involved water hammer, and that could mean cavitation to form pockets of water vapor cooled by expansion and then heated by compression so that if these actions are segregated by the design of internal fluid flow paths to put the cooling at the casing interface, then a hot output according to normal heat pump theory may apply.

On the other hand, if that casing has the same or a higher temperature than the input water supply, then a source of "free energy" has been demonstrated!

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

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

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

Upon hearing this my thoughts switched to the Correa research findings in Canada and the U.S. patented discovery of how to generate electrical power with similar "free energy" gain using plasma arc discharge techniques. (Of particular importance here is that the U.S. Patent Office has actually granted the Correa patents [FF, Dec.'95, p 10] even though they are very clearly biased on performance efficiency data well over unity. This is in sharp contrast with their posture on cold fusion, where the patent examiner takes the law into his own hands, as it were, meaning the laws of physics rather than patent law.)

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

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

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

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

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

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

We saw Hal Puthoff several times during this program, at his Institute base in Austin, Texas, as someone of academic standing interested in knowing the full truths of the "free energy" prospect and equipped and willing to engage in definitive tests and evaluation of the performance of over-unity devices. We saw Paul Czysz throwing his academic weight fully into the "free energy" and stressing its commercial and political significance. We saw Keith Hindley as a U.K. proponent urging interest in "free energy," but explaining how much of the difficulty arises because the experimental results on test apparatus are often different every time it runs. This, he said, means that there is "no

control" and scientists "could not do work" (meaning evaluation and testing) on that basis.

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

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

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

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

Meanwhile, there were two messages that came across loud and clear from this T.V. program. These were (1) "We know how to gain access to free energy but cannot explain why our inventions really work," and (2) "If only we had a theory explaining all this we could interest scientists so that they could support, rather than oppose, what we are doing." As to the theory, though perhaps not the experiments, I see no reason to dispute the wisdom of Arthur C. Clarke's words, and so, to show we are very nearly there, I claim to be one of the first to say "I thought of it first!"

## F. LETTERS FROM OUR READERS

### LETTER FROM ARTHUR C. CLARKE

Dear Hal,

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

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

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

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

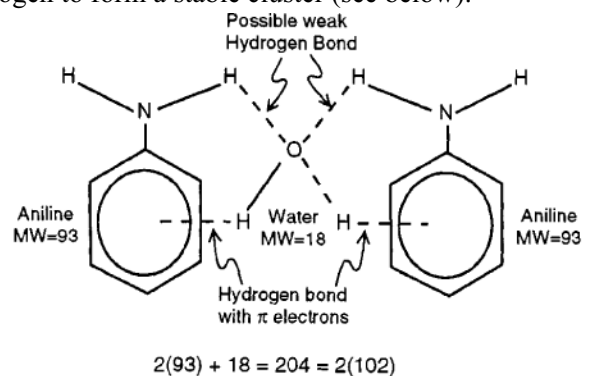
All Best, /s/ Dr. Arthur C. Clarke, CBE

### LETTER FROM GERALD LINDLEY

In the December 1995 issue of *Space Energy Journal*, there is a reproduction of Dale Pond's report of some over unity measurements reported in the conventional scientific literature.[1] In particular, it mentions excess energy released when aniline vapor is excited into fluorescence. You might be interested to know that this

can be explained by using the supergraviton mass of 102 amu as discovered by Harold Aspden and reported in *Fusion Facts* and *New Energy News*. [2]

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



Proposed Supergraviton Cluster by Gerald Lindley 12/28/95

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

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

Sincerely, /s/ Gerald Lindley

[1] Dale Pond, "Over Unity Recognized in Conventional Science," *New Energy News*, Dec. 1995, vol 3, no 7, pp 15-16.

[2] Harold Aspden, "Cold Fusion is a Live Issue," *Fusion Facts*, Sep. 1995, vol 7, no 3, p 14]; and "The 102 Factor...", *New Energy News*, Nov. 1995, vol 3, no 6, pp 5-6.

[3] *Science*, vol 257, 14 August 1992, pp 887 and 942.

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## G. MEETINGS

### COLD FUSION and NEW ENERGY SYMPOSIUM

**Saturday, 20 January 1996**

**8:00 am to 5:30 pm**

**Cambridge Marriott hotel  
Cambridge, Massachusetts**

Sponsored by *Infinite Energy* magazine

The meeting will feature speakers, video presentations, and discussions about the science, technology, and commercial developments in the rapidly growing cold fusion and new energy field. The meeting is open to the general public. A highlight will be a presentation of the latest research on the U.S. patented Patterson Power Cell, which has achieved record excess power production levels for a cold fusion process.

A nominal registration fee of \$15 will be charged (in advance or at the door). There is a limit of 200 on attendees, due to space considerations. Please RSVP your attention to attend. The Cambridge Marriott hotel is near MIT at the Kendall Square "Red Line" MTA station, and just 15 minutes from Boston's Logan International Airport.

For information or to attend please contact Cold Fusion Technology, P.O. Box 2816, Concord, NH 03302-2816. Phone 603/228-4516, Fax 603/224-5975, or by e-mail <76570.2270@compuserve.com>.

### ICCF6

#### Sixth International Conference on Cold Fusion

will be held 13-18 October 1996

Hotel Apex Toya, Hokkaido, Japan

sponsored by

New Energy & Industrial Technology

Development Organization (NEDO)

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)

**The Deadline for abstracts is May 1996.** More information will be available in the second announcement, issuing in February 1996. Registration fee of ¥40,000 (about \$400) includes a banquet and proceedings. A technical tour to the NHE lab is scheduled, along with other professional and social events.

### CALL FOR PAPERS

International Association of Science and Technology of Development (IASTED)

#### International Conference on HIGH TECHNOLOGY IN THE POWER INDUSTRY

4-8 June 1996, Banff, Alberta, Canada

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

Submission of papers

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

**INTERNATIONAL  
SYMPOSIUM ON NEW ENERGY**

**An Exploration of "Free Energy" Generators**

**April 25-28, 1996**  
Denver Hilton South Hotel  
Denver, Colorado

**CALL FOR PAPERS AND ABSTRACTS:**

Scholarly papers are invited on any topic related to New Energy, and should include one or more of the following: Theories, designs, inventions, and research results. Abstracts of not more than 400 words must be sent as soon as possible to the address below. Consideration of abstracts cannot be assured if received after March 15, 1996. Authors will be notified as soon as possible if the paper is accepted for presentation. Copy-ready manuscripts for proceedings are due April 1, 1996.

SYMPOSIUM ON NEW ENERGY  
International Association of New Science  
1304 S. College Ave.  
Fort Collins, Co 80524

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

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

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

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

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## Commercial Column

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### FURTHER DEVELOPMENTS IN COMMERCIALIZATION

As covered in this issue, a milestone has been achieved by Japanese scientists by using finely divided palladium loaded with deuterium. Excess heat has been generated for over 2,000 hours. [see Japan, p 9] In addition, the CETI organization has sold or is in final negotiations for the sale of a license right to the Patterson Power Cell™. Jet Technology is reporting continued excellent successes with light-water, nickel cathode cold-fusion cells. FIC has received a commitment for funds to be used to further the commercialization of new-energy technologies. Groups in Australia, South Africa, and Switzerland are negotiating for product and sharing of technology for new-energy products. The Japanese have increased their budget for the development of **new hydrogen energy systems**. In summary, it appears that 1996 is off to a good start as the first of a few centuries of the commercialization of new energy systems.

We receive calls periodically to inquire about Kenneth Shoulders and his high-density charge clusters. Except for the occasional discussions in this newsletter, the best source of information about high-density charge clusters is to be found in a careful study of U.S. Patent 5,018,180. We are pleased to report that Kenneth Shoulders and his son Steve are working in a well-equipped laboratory and making good progress toward the commercialization of devices that are expected to provide useable electric output from a low-power, medium-voltage source of electric input. In their development effort they must make measurements of time intervals, and hopefully be able to view the progress of a high-density charge cluster that is traveling at somewhere around one-tenth of the speed of light. Because there are no such instruments available, they



have had to invent and build their own equipment. We are pleased to report that they have developed instrumentation that allows them to capture images of charge clusters in the sub-pico-second range. That achievement is about one thousand times better than the current best oscilloscopes. In addition, they can produce electron-generated images and capture the images for display on the monitors of their personal computer. *Fusion Facts* forecasts that we will be able to provide our readers with released information on the Shoulders' successes before the end of 1996.

We have received a copy of a Japanese advertising leaflet telling about the use of the Takahashi super motor in a moped. We have faxed the company for further information. If the previous reports are independently verified, the Takahashi super motor is a prime candidate for many applications including its use in all types of electrical vehicles. We have reports, such as from *The Times* of London that this motor can both run the vehicle and charge the batteries (at least battery charging is expected when the moped is not hill climbing).

Those who have received only the standard engineering and/or scientific training will find it difficult to accept the idea that a device can tap the energy of space. However, both the super motor and the high-density charge cluster technologies appear to have that capability. Those skilled in the arts of plasma physics have found it difficult to accept cold fusion. The acceptance of fundamental new discoveries never was easy. Now we have three dramatically new **and controversial** sources of new energy production. We expect a slow but accelerating growth among those industries who do accept and manufacture and/or market these new energy devices. We will add to the following list as fast as we learn about new corporate entries into new energy technologies.

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

**COMPANY: PRODUCT**

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

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

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

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

**E-Quest Sciences:** Exploring The Micro-Fusion™ process. Seeking qualified research partners for their 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 more. We are the publishers for *Fusion Facts*. Voice 801-583-6232, Fax 801-583-2963.

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

**Hydro Dynamics, Inc.:** Hydrosonic Pump, heat-producing systems using electrical input with thermal efficiencies of 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 617/237/2625. Fax 617/237/3625.

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

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

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

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

**INFORMATION SOURCES**

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

**Institute for New Energy**, organization to promote and help find funding for new energy research.  
Home Page: [www.padrak.com/ine/](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) Voice 801/583/6232, Fax 801/583/6232.

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

*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.cff.html>

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

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

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

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

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

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

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

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