FUSION facts

A Monthly Newsletter Providing Factual Reports On Cold Fusion Developments

ISSN 1051-8738 • University of Utah Research Park •

ISSN 1051-8738

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

VOLUME 6 NUMBER 12 **FUSION FACTS** **JUNE 1995**

CONTENTS FOR JUNE 1995

A. IT MIGHT HAVE BEEN 1

B. NEWS FROM THE U.S..... 5

C. NEWS FROM ABROAD..... 10

D. SHORT ARTICLES 12

DEFENSE & THE AETHER - Harold Aspden
WHALE OIL SYNDROME - Hal Fox

E. LETTERS FROM READERS..... 14

NOTICE FROM ICCF
LETTER FROM EUGENE MALLOVE
PHYSICS ON AMERICA ON LINE
LETTER TO ANOTHER EDITOR

E. MISCELLANEOUS & MEETINGS 17

COMMERCIAL COLUMN
MOLDAVIAN WATER VORTEX HEATER
WORLD ENERGY UPDATE
RUSSIAN CONFERENCE - OCTOBER '95

If you find a path with no obstacles,
it probably doesn't lead anywhere.
-Frank A. Clark

A. IT MIGHT HAVE BEEN

By Hal Fox

"For all sad words of tongue or pen,
The saddest are these: 'It might have been'!"
John Greenleaf Whitter (1807-1892)

COMMERCIALIZATION HAS BEGUN

Now that the commercialization of cold fusion has begun, with little help from the U.S. Office of Patents and Trademarks or from the Department of Energy, it is timely to consider what might have been. One of the missions of the Department of Energy is to support the development of alternative energy systems. After asking some of its energy laboratories to investigate cold fusion in 1989, the DOE curtailed all official expenditures on cold fusion in 1990 **even though four of its laboratories had succeeded in replicating or extending the work of Pons and Fleischmann!** The patent office, charged by the constitution of the United States to provide patents to inventors, continually refused to treat cold fusion seriously with the result that an estimated 200 patents on cold fusion have issued abroad and only one or two have issued in the United States.

REPLICATED IN 30 COUNTRIES

After over 200 laboratories in thirty countries have shown that nuclear reactions are catalyzed in relatively low-energy environments, cold fusion is still being attacked by officials of the American Physical Society, and cold fusion is banned from publication is almost every peer-reviewed journal in the U.S. except for *Fusion Technology*, the Journal of the American Nuclear Society (thanks to the dedicated efforts of its editor, Dr. George Miley). No major university in the United States has a funded, on-going cold fusion program. However, individuals within some of these universities have made advances in this new science. Excellent work has

been performed at Texas A&M, Cal Poly at Pomona, University of Hawaii, University of Oregon, University of Minnesota, and MIT.

ATTEMPTS TO DESTROY COLD FUSION?

If you ask the typical concerned citizen about cold fusion he or she will probably respond that it didn't work or was a scientific error. When you tell the true story of the continued development of cold fusion, it usually excites the listener. "What went wrong?", or "Who stopped the work in the U.S.?", are the kind of questions then asked. Then almost without exception, the listener speculates that the oil companies or the electric power industry or the Detroit auto makers, or some oil cartel **must be responsible for trying to destroy cold fusion.** The "sad words of tongue or pen" is that the destroyers of cold fusion are not the huge energy companies **but the advocates of hot fusion who, acting as lobbyists for DOE funds, saw cold fusion as a threat to their $500 million a year of hot fusion funding.**

WHAT COULD HAVE BEEN

`What could have been' is, of course, only speculation, however, here is a possible scenario. Pons and Fleischmann were (and are) world-renowned electrochemists with about 50 co-authored papers many of which relate to the study of hydrogen in metals. They had nothing to gain by announcing a fraudulent or mistaken discovery. The most intelligent approach, on the part of the hot fusioneers, would have been to immediately suggest that this discovery merits further study and to have suggested the distribution of five or ten percent of the hot fusion budget to the serious study of cold fusion **with the close cooperation of these eminent scientists, Pons and Fleischmann.**

INSTEAD OF DESTRUCTIVE LOBBYING

Instead of attacking a new discovery, the hot fusion scientists could have sought to study and explain the phenomena. Instead of funding the speeches, writings, and travel of such persons as Taubes, Huizenga, and Morrison, there could have been an effort to publish factual findings. Instead of inside lobbying against any publication of cold fusion in peer-reviewed journals and threatening the physics and science departments with the withholding "of any grants from Washington, if you have any graduate students working on cold fusion," rapid communication of factual results of encouraged research could have been supported. Instead of heavy-handed meddling in the Office of Patents and Trademarks, the normal processes of the protection of intellectual property could have been allowed. Instead of vigorous lobbying in the DOE against cold fusion, the successful work could have been encouraged. **Instead of being faced with the dismantling of energy research, the hot fusion efforts would, by now, have been augmented and the U.S. would have been the obvious world leader in new energy technology!**

THE RESULTS OF ANTI-COLD FUSION

The results of the lobbying against cold fusion are the following: The DOE is threatened with being dismantled. The entire hot fusion program is facing a shutdown of funds. The universities whose professors have been the most intense lobbyists are suffering from a great loss of respect and financial support. The Office of Patents and Trademarks is faced with a suggested Congressional investigation. Another U.S. discovery is being strongly supported in Japan and Japanese industry will probably be the primary manufacturers and sellers of cold fusion devices and systems. The U.S. corporations, as they discover they have been lied to by the Department of Energy, are going to be highly suspicious of any degree of scientific credibility from any government agency.

WHAT CAN BE DONE

What should be done, now? Is it too late for the U.S. to recover a position in this new energy field? These are the latest questions and here are some suggestions: Engineers, inventors, and scientists in the U.S. are some of the world's best and definitely the world's most innovative. U.S. capitalists (from the worker who invests in his company's stock to the most proficient venture capitalist) have built and will continue to build U.S. industry. U.S. business men have organized and managed the world's most productive industrial organization. **We have not, as yet, lost the race for the commercialization of cold fusion.** We will if we do not act. Collectively, our actions should include the following ten positive steps: 1. Invest in the commercialization of cold fusion and new energy systems; call your broker and ask him where you can invest. [see the following article "Investing in New Energy.] 2. Get copies of publications about cold fusion in the hands of your influential friends. 3. Support any energy conferences, especially where devices will be demonstrated. 4. Write non-emotional letters to the editors and to the writers who quote from the anti-cold fusion sources. 5. Write to your members of Congress. 6. Organize and attend discussion groups but be armed with solid technical literature. 7. Help arrange for demonstrations of working cold fusion devices to be shown in your own community. 8. Give out factual information with dates, publications, and results on

radio talk shows. 9. Get Eugene Mallove's book Fire from Ice, and Fox's book Cold Fusion Impact in the Enhanced Energy Age into your local libraries and schools. 10. With permission, copy articles of interest from this (and other) publications and give to interested and influential friends. [For such purpose, you have the permission from *Fusion Facts* to xerox or re-publish, always citing the source.] **If you don't help, who will?** For further information on the commercialization of cold fusion and who's who, see the section in this issue on Commercialization.

INVESTING IN NEW ENERGY

The inventor of the xerographic copy machine told a taxi cab driver about his invention. It is reported that the cab driver invested $100 and became a millionaire. While this may be an unusual or a somewhat distorted story, it is true that those who invest early in new technology **if they pick a winning company**, can realize handsome returns on investments. For example, managers of many venture capital funds expect to realize a tenfold return on investment within a two- to three-year period. **However, this tenfold return must make up for failed expectations where there were zero returns or a complete loss of an initial investment in other non-winner companies.**

BEWARE THE INSTANT NEW ENERGY EXPERT

You can "bet your bottom dollar" that there will be ten times as many scams as there will be honest proposals for new energy investment! How can you protect yourself? The answer to that question is the purpose of this discussion. You may want to spend some investment capital to "get in early," but you don't want to "pour money down a rat hole." The issue is to use your best intellectual efforts and tools to discriminate between the high future return on investment (ROI) and the "rat hole."

The author has been reading the enhanced energy literature (over 2500 papers), attending technical meetings, and meeting many scientists, engineers, and business persons who are involved in this exciting new energy field. This experience coupled with the author's education, both as a scientist and later in earning an MBA degree, provides a background for the evaluation of new energy proposals. **However, even with this training and experience, it is not possible to accurately forecast the future of a proposed business venture.** However, there are some observations that will help the investor, as follows:

1. Determine if the company has a balanced business plan. For example, one new company seeks to manufacture new batteries, new motors, and new battery-charging systems for electric vehicles. It may be assumed that **with sufficient capital** the company has an opportunity to make a success out of three different product lines. In this company, only the new charging system is based on the successful application of enhanced energy technology. A second example is a Nevada company that proposes to build an electric automobile based, in part, on enhanced energy technology. No one can assure you which company is going to be the best investment. However, it would appear that the company specializing in batteries, motors, and battery chargers would have the least risk because, conceptually, they could succeed with any one of the three products.

2. **Determine if the company has professional management and sufficient capital to achieve their stated goals and objectives.** Lack of sufficient capital and poor management will probably be the two most important factors in determining the success or failure of a new business.

3. **Determine if the company has a proven, independently-replicated, enhanced-energy process.** Has the proposed technology been developed to a production prototype? What is the test data? What are the production costs as compared to alternate technologies? (This is an important issue. There are many good products that just do not compete in price with current, established technology.) Does the company have patent protection or license rights? Even if all elements appear to be favorable, one of the greatest risks is that today's invention may be surpassed by tomorrow's invention by another company. For example, one of today's cold fusion patented devices has been replicated, demonstrated, and is being offered for licensing to manufacturing companies. However, there is another technology that has been tested, proven, but not announced. How is the investor going to ensure that he is investing in the best technology? The answer is, "You will never know." **Thus, don't invest all of your money on one product or one device.**

4. **What is the market size for the specific product being promoted?** In general, the size of the energy market is absolutely huge. Energy costs are an estimated one-fifth to one-fourth of the total costs of all goods and services. No one company can be expected to have a large percent penetration into such a huge (multi-trillion dollar per year) market. **Therefore, a company has to plan to penetrate a segment of that market**. For example, if a company

states that they expect to make millions of dollars providing new power sources for roller coasters, the market may not be big enough to produce their anticipated revenues. On the other extreme, making millions from the electric auto market must be tempered with the fact that all of the major automobile companies are working on models of electric automobiles. These companies already have huge distribution organizations in place. You might decide that the company furnishing new energy systems for roller coasters has a better chance of success then the company planning to compete with General Motors and several other automobile giants.

5. **Obtain qualified, competent technical advice.** Where does one obtain competent scientific or technical advice on enhanced energy devices or systems? This is an important and controversial question with no simple answer. It has often been stated in articles about cold fusion that the majority of scientists do not believe in cold fusion. However, it is now a historic fact that after six years of development, cold fusion devices and systems are being commercialized. **The important concept is not how many scientists "believe in it," but does it work and can it be produced economically.** The Fusion Information Center (FIC) in Salt Lake City, Utah has the world's most complete collection of information on cold fusion. This organization has been publishing *Fusion Facts* for six years and has an extensive data base. This organization consults with both individuals and companies who are seeking information about cold fusion and its future. The same statements can be made about enhanced energy devices in general, therefore, FIC may be able to answer queries concerning experimenters, theorists, and consultants in the field.

6. **Find out whether you are investing in Research, Development, Manufacturing, or Sales.** The most risky is financing research because, by definition, no end product has been specifically defined. If the research has been completed (at least to the extent of a definable product) the risk is less and the development of a production prototype is the next step. If a production prototype is available, then the business plan is probably related to manufacturing a product. Here the risk is generally less than a development project. Finally, if the business plan is to market products manufactured by others, the risk reduces to business marketing skills, and penetration of a specific market. An investor knows that reduced risk usually means reduced rates of return. **Only the most risk-seeking (and potential large profit-seeking) investor will invest in research**. Unless you are highly competent to technically judge the merits of an invention, it is strongly suggested that you avoid investing all of your risk capital in research. **Again, it is wise to diversify.**

After all of these suggestions and warnings, invest in some aspect of new energy. Be out of debt (except possibly for your home.) Don't invest money you can't afford to lose. Do not borrow to invest. Diversify your investments within the new energy field. Cold fusion and other enhanced energy systems will have a greater impact on this world than any previous invention of this century! Become informed and become a participant in the coming energy-rich world. If you can't invest money, invest time and become an expert in some aspect of this new energy field. The new energy world needs both capital and talent.

[Note: This editorial is the essence of a chapter in Hal Fox's forthcoming book: Space Energy Impact in the 21st Century.]

RIGHT SECTOR - WRONG SEGMENT?

Refer to: Brendan Boyd (investment writer), "Oil services stocks in energy sector are the top pick of finance newsletter," *Deseret News*, June 4, 1995, page M5.

The *Personal Finance* newsletter (1101 King St., Suite 400, Alexandria, Va. 22314) proclaims that the best investment group for the next five years is the energy group. From that statement, one would believe that they had been reading *Fusion Facts* and *New Energy News* or, at least, were reading the same information sources. However, *Personal Finance* goes on to state that **if they had to choose just one segment of the energy sector, "it would be the oil services issues**."

It has been six years since the University of Utah called a press conference and introduced Drs. Pons and Fleischmann to the media. This announcement of the discovery of cold nuclear fusion (the catalysis of low energy nuclear reactions) has now engendered over 300 patent applications, at least seven new methods for catalyzing nuclear reactions, and the commercialization of a new energy industry. (See the Commercialization Report on page 17 of this issue.)

The following few publications report on the progress of cold fusion: The newsletters and magazines--*Fusion Facts, New Energy News, Infinite Energy, "Cold Fusion", Cold Fusion Times,* and coverage in most issues of *Fusion Technology* (Journal of American Nuclear Society), and *21st Century Science and Technology* (specializing in science for the layman and the social impact). Only a few

articles have appeared in other journals, magazines, and financial publications. This heavily influenced lack of media coverage has been sponsored mainly by those scientists who are pathologically skeptical of any science except their own cherished hot fusion research. This is the same group that has been the primary energy advisors to the Department of Energy. (A sorry note is that this advice has been so pervasive and unproductive that the DOE now faces serious efforts to have the department disbanded. This result of misguided skepticism must be the epitome of errant counsel.) **Therefore, in the absence of competent information from the DOE concerning new energy sources, the financial media has yet to discover the investment potential of the greatest energy revolution this earth has produced.**

However, *Personal Finance* does martial some important concepts: "Even if Iraq oil comes back on stream, the world will face energy shortages by the end of 1996...," and the fact that China's per capita energy consumption is only one-fiftieth that of the U.S. As bicycles are exchanged for motor-driven vehicles, the demand for energy will skyrocket. There is only one problem with the view from *Personal Finance*, they are still suffering from the Whale Oil syndrome. They have yet to discover that there is an alternative energy source "just around the corner." Neither *Personal Finance* nor the *Wall Street Journal* and other financial publications have, as yet, learned that commercialization of cold fusion (and other enhanced energy sources) are imminent. Come on, Jerry Bishop, it is time for another of your cold fusion articles.

[Jerry Bishop is a science specialist for the *Wall Street Journal*, and has treated the subject of cold fusion in a fair manner. Therefore, as a fair-minded reporter, we have kept Jerry Bishop informed of the continuing development of cold fusion. We shall also send a copy of this issue to the editor of *Personal Finance.* Ed.]

B. NEWS FROM THE U.S.

WASHINGTON D.C. - NEGATIVE AMPLIFIER

News article courtesy Jed Rothwell

Reference: William J. Broad, "G.O.P. Budget Cuts Would Fall Hard on Civilian Science," *New York Times*, Monday, May 22, 1995.

This article, in defense of government-financed science, states, "At risk is the type of Government-financed basic science that has put men on the moon, explored the deep sea, unlocked the atom, cured cancers, ... and discovered the chemistry of life..." **The article failed to mention that the same agencies attempted to destroy cold fusion, built up enormous piles of radioactive wastes, failed to allow known disease cures to be implemented, and have refused to fund the development of new energy**.

Studies in innovation have thoroughly demonstrated that most of the important scientific discoveries and innovations **do not occur in large government laboratories.** Small progress **is** made in increments in large laboratories. Try to think of one major development that was made in a large laboratory. Transistors at Bell Labs by Shockley, you might suggest. Of historical interest is the fact that Dr. Henry Moray demonstrated the transistor in the 1930s to two professors who later worked at Bell Laboratories. The scenario might have been: "Shockley, you might be interested in what we saw on south Fifth East in Doc Moray's front yard. He had this radio playing with no vacuum tubes. He used something like a crystal **and it amplified."**

Try some more innovations: airplane, radar, light bulb, radio, television, desk-top computers, cold fusion? Sorry, all of them developed, at least initially, in some inventor's garage, attic, or small laboratory. The point is that one of DOE's mission statements is to develop alternative energy. After the oil-price quadrupled, DOE became the successor to ERDA (late 60's?). After three decades and $20 billion (at least), what has DOE accomplished in alternative energy? They reached the same conclusions at ERDA: Energy from biomass, geothermal, solar, and wind are not competitive with standard methods of producing energy. **However, DOE has achieved another triumph: Hot fusion is not practical, not competitive, and likely will never be successfully commercialized**. Another triumph of DOE: After decades of study, the nuclear waste problem in the U.S. is worse than when DOE started and is getting worse every year. The burden of radioactive waste from both energy and weapon sources is now a health-threatening problem to many American communities.

How did DOE get to be such a good negative amplifier. A look at one example: cold fusion when announced in March, 1989 was a possible solution to the energy production problem. Unlike hot fusion, which has never achieved as much energy out as input, cold fusion when first announced had demonstrated the capability to produce excess energy output. This significant energy-producing achievement resulted in hundreds of thousands of dollars of tax payers funds (supposedly for the use of energy research) diverted to destroy cold fusion.

Here is another example: The civilian science budget of the government is far less than the monies spent by American corporations. However, **the tax-paying corporations of the U.S. are naive enough to believe that federal government agencies would make an unbiased investigation of new energy devices and report publicly on promising new developments**. Therefore, by damning with faint praise, those who control the policies of the DOE can greatly dampen or, with suitable praise, can greatly accelerate the corporate funding of new research. Thus, the highly-biased ERAB report on cold fusion strongly dampened U.S. corporate interest in spending commercial research dollars on cold fusion.

There exists, among nearly all bureaucrats who head problem-solving agencies, a complete understanding of the cost of finding a solution to a problem. **If you solve a problem, the problem disappears and so should the agency created to solve the problem!** Therefore, it is not the objective of agency administrators to solve the problem for which the agency was created. So what is the answer? Government agency administrators should receive a substantial bonus for solving a problem together with a promise of being assigned a new problem to solve. Only with incentives paid for solutions will government problem-solving agencies function properly. It is suggested that an agency for New Energy be established with ten percent of the funds going to pay bureaucrats for finding solutions to specific problems. New Energy contracts would then be awarded, not just to friends and cronies, but to those most likely to solve the problem. An even better idea: **Pass a law that gives tax-paying corporations and companies the right to deduct the full amount of their research from income taxes owed if a company solves a specific problem as posted by the government as being in the national interest.** Now we just have to make sure that the agency posting the problem is not posting a problem already solved by one of their friends.

WASHINGTON D.C. - BYE BYE, DOE?

Gary Lee (Washington Post), "Energy Department One of 4 to Go?" *Salt Lake Tribune*, Sunday, Mar. 26, 1995.

Being introduced into the House this spring is a bill designed to abolish the DOE. The bill crafted by Rep. Sam Brownback (R-Kan.) is supposedly an attempt to help reduce the deficit, as are three others targeting the Departments of Commerce, Education and HUD. The result of the end of the DOE, according to this bill, would be the creation of a new federal entity, the National Special Weapons Agency, to oversee the three weapons laboratories; the transferring of the department's other 25 laboratories to the private sector; and the loss of about 40,000 jobs.

Energy Secretary Hazel R. O'Leary, mobilizing opposition to the plan, said it would make little savings, while it would destroy some valuable programs. The future for the DOE looks bleak, with Senate Majority Leader Bob Dole (R-Kan.) planning to push its elimination. The White House planned to dismantle the DOE last year, but now pledges to follow through. [latest news - only Dept. of Commerce being axed by this bill. --Ed.]

WASHINGTON D.C. - PATHOLOGICAL SKEPTIC

Courtesy of Jed Rothwell
Taken from InterNet

WHAT'S NEW by Robert L. Park, Friday, 28 Apr 95, Washington DC

"A FEW COLD FUSION DIE-HARDS GATHER IN ANAHEIM AND MONTE CARLO.
The only story was the contrast in ambiance. A luxury hotel in Monte Carlo, near Fleischmann and Pon's luxury lab, was the venue for the 5th International Cold Fusion Conference; the wine bill was picked up by an unnamed benefactor. A week earlier, at the American Chemical Society meeting in Anaheim, cold fusion was relegated to a poster session in a hotel parking garage; only five presenters actually showed up. Rumors of sensational new results at Texas A&M and in Italy failed to materialize. The Electric Power Research Institute, until now the major patron of cold fusion research in the U.S., reportedly has called it quits."

EDITOR'S COMMENTS

Don't believe everything you hear... or read on the InterNet. This is the same Robert L. Park who proclaimed in 1990 that the first International Conference on Cold Fusion was the "last gasp of a dying corpse." Dr. Park, we prefer being cold fusion Die Hards to being a pathologically skeptic Dead Head. Some well-known cold fusion scientists who had originally proposed to present their research at the ACS meeting (and had been accepted) withdrew when they found out that they would only be allowed a short poster session, relegated to a garage. Why didn't you report the demo of the cold fusion reactor at the ICCF5 conference that produced 200%+ more ouput than input?

CALIFORNIA - SUCCESSFUL HOT FUSION

Gerry Vassilatos, "The Farnsworth Fusor," *Borderlands*, vol 51, no 2, Spring 1995, pp 6-13.

SUMMARY

Although billions of dollars have been spent in the hot fusion arena, no successful end appears in sight among all the "promising" noises from highly paid researchers. They don't realize that their goal, has already been achieved, covered up and suppressed in 1965. Philo T. Farnsworth, the original designer of true electronic television, produced a completely controlled and repeatable reaction in his Mark III Fusor, which employed inertial containment.

Farnsworth was the prolific designer of many unusual electron tubes since before World War II, and has many patents to his name to support his legend as a radical genius. While testing high power UHF tubes in 1936, **he discovered an anomalous self-focussing space charge phenomenon: plasmoids which glowed even more brilliantly with increased voltage -- a control characteristic**. He called these point-plasma phenomenon "poissors." Farnsworth multipactors and cold cathode discharge tubes produced optically focussed "poissors" and exhibited all the response-control characteristics later sought by plasma physicists in their hot fusion race. The poissor phenomenon made possible a whole new type of electron power tubes and plasma devices and stimulated Farnsworth's research toward the refinement of electron optics.

By 1953 Farnsworth had conceived of a means of using the poissor phenomenon to produce controlled nuclear fusion reactions. The patent record shows that he achieved his goal. His first design for a hot fusion reactor was accomplished in 1959, and in October 1960 he solved both containment and conversion problems in one design, the Fusor Mark I was tested and worked (see U.S. patent 3,386,883). The field symmetries and processes involved in achieving this variety of hot fusion seem macro-analogous to those characteristic now being explored in cold fusion.

The suppression and assassination of technology is historically the response of frightened competitors... responding to a impending breakthrough that might make them irrelevant. Farnsworth found his research project stopped, and ITT took over all the patents and applications for itself. Farnsworth's health declined, and though he continued his Fusor experiments in a small lab at Brigham Young University, he died in 1971. ITT has never developed any of Farnsworth's patents or applications, even though they had been experimentally successful.

This article points out that while Farnsworth did achieve a hot fusion success, remarkably few individuals in fusion research are aware of it. It goes on to discuss not a "conspiracy" theory, but moreover a series of professional, political, and economic reasons and actions that may have been at work in devaluing and ignoring anomalous new discoveries and technology. It ends on a hopeful note -- no matter whether "suppression" or manipulation occurs or not, there is an unstoppable reaction: "the frightening release of newer, simpler technologies in every corner of the world. This phenomenal dispersion so assaults would-be controllers that no one regulator may ever seize, quench, or destroy the new technological species." (Summary by D.Torres)

[Philo T. Farnsworth was my boyhood hero. Later his attorney built next door to me and I met Philo there. An interesting note -- Ken Shoulders worked with Philo Farnsworth at one time in his career. --Ed.]

CALIFORNIA - CF AT 209TH ACS

Edmund Storms (Los Alamos, N.M.), "Cold Fusion Featured at ACS Meeting," *21st Century*, vol 8, no 2, Spring 95, p 7.

SUMMARY

The super conservative American Chemical Society (ACS) has had a breakthrough, at their 208th meeting in Anaheim in March. They allowed space for cold fusion. It was small and out of the way, but nine poster demonstrations of cold fusion research presented evidence for the excess energy production and several nuclear products, such as helium and tritium. The presenters were from the U.S. and Japan.

The research shown at the meeting was only a small part of the worldwide assault on the new frontiers of energy science, but the results are being listened to by more people. Although the lack of significant amounts of radiation are missing, causing much skepticism in the past, the other signs of nuclear reaction are still seen. There is less room available every month for the pathalogical skeptics to retain a foothold.

CALIFORNIA - GLOBAL ENERGY NETWORK (GENI)

FF is kindly disposed toward anyone, or any group, who are working to solve the world's energy problems. Therefore, we are grateful to the GENI group for sending us their newsletter. If you are interested in learning more about the proposed Global Energy Network, write to GENI, P.O. Box 81565, San Diego, CA 93128.

There may be a problem with the proposed global electrical energy grid. Several years ago, engineers at IBM presented management with a desktop computer with two floppy disk drives. The marketing gurus made their sales analysis and predicted that the market would be an estimated 750,000 computers mainly for engineers to use as engineering work stations. The decision was made to go ahead with the product, but because of the expected low volume, the disk operating system (DOS) was farmed out to a little outfit. Seventy million (editor's estimate) desk-top computers later, the DOS has made a multi-billionaire out of Bill Gates, the primary owner of the MicroSoft DOS. Meanwhile, IBM has lost about one-half of its global mainframe revenue as customers have replaced mainframes with distributed desk-top computing systems linked by such things as Novell's NetWare.

It is our studied judgement that the commercialization of enhanced energy systems will have a similar effect on the electric power grid. The commercialization of enhanced energy systems has begun. License fees ranging from $250,000 to $1 million are being asked and reportedly being collected. The immediate leaders in commercialization of devices are the Patterson Power Cell ™ by Clean Energy Technologies, Inc. of Dallas, Texas, the Hydrosonic Pump of Hydro Dynamics, Inc. of Rome, Georgia, and the vortex cavitation device being produced in Moldavia. On the intellectual property forefront is ENECO, Inc. of Salt Lake City, Utah, who offer a variety of enhanced energy patents and patents pending. Other companies are offering products and/or services with several, as yet unannounced, companies preparing to enter the market.

It is exceedingly difficult to predict either the communities or industries that will be first impacted by enhanced energy systems. However, it is certain that those who produce and market electrical power will experience reduced demand as the enhanced energy devices proliferate. It must be remembered also, that cold nuclear fusion devices create thermal energy. **As cold fusion devices are manufactured and sold the negative impact may be experienced more strongly by the natural gas industry.**

The greatest effect of the commercialization of enhanced energy devices and systems will be the impact on the American consumers who have been so seriously misinformed by the media, the DOE, and the patent office. There will be a rapid struggle to identify and shift the blame to others: to the media, the DOE, the ERAB committee, MIT, Cal Tech, and the writers of books proclaiming that cold fusion was bad science (Frank Close, John Huizenga, and especially Gary Taubes). **The radio talk shows are about to have a field day.** By the way, you should buy copies of the anti-cold fusion books before they are trashed by the publishers because they will become collector's items. The author's of anti-cold fusion books will be faced with considerable teasing. However, I'll wager that every anti-cold fusion writer has gone on record somewhere, with some version of, "Of course, I would be the first to embrace this new discovery if were proven!"

CALIFORNIA - PLASMA CONFIGURATIONS

The EV is an abbreviation for "Electrum Validum" (meaning strong electron) and is Kenneth Shoulders' designation for strong-density charge clusters. Readers of *FF* will remember that the high-density charge clusters are clusters containing about 10^{10} electrons in a stable cluster (possibly as a miniature toroid), that travel about 0.1 the speed of light, and appear to have the capability (according to U.S. Patent 5,018,180) of tapping zero-point energy.

There is very little literature directly concerning EVs. However, the recent issue of *Fusion Technology* has a special section: "Spherical Plasma Configurations." Here are four articles in this section that may have some peripheral concepts that may apply to some of the reported EV phenomena:

S. Manservisi, V.G. Molinari, & A. Nespoli, "X-Ray Emission from the Linear Plasma of a Spherical Pinch: The Electron Distribution Function in a Strong Electric Field," *Fusion Technology,* May 1995, vol 27, no 3, pages 237-244, 2 figs, 10 refs.

Haibo B. Chen, Brian Hilko, Jiong Chen, Emilio Panarella, "Radiation Emission Characteristics from a Spherical Pinch High-Z Plasma: A Numerical Study," *Fusion Technology,* May 1995, vol 27, no 3, pages 245-254, 12 figs, 8 refs.

J. Reece Roth, "Ball Lightning: What Nature is Trying to Tell the Plasma Research Community," *Fusion Technology,* May 1995, vol 27, no 3, pages 255-270, 15 figs, 20 refs.

Igor Alexeff, Mark Rader, "Possible Precursors of Ball Lightning -- Observation of Closed Loops in High-Voltage Discharges," *Fusion Technology,* May 1995, vol 27, no 3, pages 271-273, 3 figs, 10 refs.

In the last reference, Figure 3, shows "a spark discharge at high voltage containing closed current loops and reflected images." It is suggested that some of the traces recorded by the camera were from fast-moving high-density charge cluster trails that, on the picture, appear to be filaments. It has been reported that many electrical discharges create EVs. You can try it for yourself. Place a very thin sheet of metal foil against a d.c. anode and create a spark from cathode to anode. By microscopic examination, you will probably find several pin-points of perforations on the witness plate (the thin metal foil) that range in size from 1 micron to 20 microns in diameter. These are probably the EVs that are the subject of Shoulders' patents. It is supposed that EVs come in sizes ranging from 1 micron to several inches (as ball lightning). Look carefully at time-lapse photographs of lightning strokes. You will often note lightning tracks that appear to create their own directional environment -- obviously not following a plasma trail. This changing, meandering, and even looping patterns are suggested to be large high-density charge clusters. When you put that many electrons (mostly) together, they appear to form a local highly-charged environment that essentially shields the charge clusters from any general electric field. The result is that these charge clusters make their own local rules as to what direction they will travel.

In the miniature world of Shoulders' EVs, the patents teach that these charge clusters retain their size and stability in the absence of a conductive material. However, when the charge cluster encounters a conductor, such as impacting a metal anode, the charge cluster may disintegrate rapidly. One of the Shoulders' inventions controls the sudden impact of the charge cluster so that X-Rays are produced. Except for periodic comments about this new technology written by this editor (and appearing in both *Fusion Facts* and *New Energy News*), there have been very few articles written. The late Petr Beckman ("Electron Clusters," *Galilean Electrodynamics*, vol 1, vo 5, Sept/Oct 1990, pp 55-58, 6 refs) and Zilokowsky & Tippett ("Collective Effect in an Electron Plasma System Catalyzed by a Localized Electromagnetic Wave," *Physical Rev. A*, vol 43, no 6, Mar 15, 1991, pp 3066-3072, 7 refs) are the two major articles published in peer-reviewed journals. It is this editor's opinion that in the next few years there will be hundreds of Ph.D. candidates investigating various aspects of the formation, travel, and dissolution of EVs. It is probably one of the richest sources of research for new discovery since Shockley rediscovered the transistor.

OREGON - FUTURE WORLD ENERGY

SUMMARY

Brian O'Leary (co-founder of IANS, former Apollo astronaut, former physics faculty at Princeton Univ.), "The Free Energy Community of the Future," *New Science News*, vol 4, no 2, 1995, p 2.

Instead of a "solo search for the Holy Grail of new energy," Brian O'Leary is focusing on the changes and foundations that the transformation to a new energy structure will need. Out of the foundation relationships could grow the organizations and networks to best facilitate an orderly and rapid change to enhanced energy systems.

O'Leary promotes the gathering of an international privately- or publicly-funded research community to concentrate the power of many trained and innovative minds on the development problems surrounding the final commercialization of new energy devices. The implications and consequences of this research project could be revolutionary. "The stranglehold exerted by suppression and lack of funding could be broken with a concerted international effort -- an effort that grows out of an international research community founded on mutual respect and trust."

O'Leary postulates that the Institute for New Energy, founded by IANS in 1993, may provide the basis for the beginning of the international free energy community.

MASSACHUSETTS - Ni AND LIGHT WATER

Zvi Shkedi, Robert C. McDonald, John J. Breen, Stephen J. Maguire, and Joe Veranth (Bose Corp., Framingham), "Calorimetry, Excess Heat, and Faraday Efficiency in Ni-H_2O Electrolytic Cells," courtesy of Zvi Shkedi, accepted for publication in *Fusion Technology*.

AUTHORS' ABSTRACT

Apparent excess heat has been observed in light-water electrolytic cells containing a variety of Ni cathodes, a Pt

anode, and an electrolyte of K_2CO_3 in H_2O. High accuracy calorimetric measurements show apparent excess heat in the range of 15 to 37 percent of input power if a 100% Faraday efficiency is assumed for H_2 and O_2 gas release. The H_2 and O_2 gases released during electrolysis were recombined in a vessel external to the cell and the quantity of recombined H_2O was compared to the quantity of H_2O expected from 100% efficient electrolysis. It is shown that the measured Faraday efficiency is significantly less than 100% and that conventional chemistry can account for the entire amount of observed apparent excess heat to within an accuracy of better than 0.5%.

C. NEWS FROM ABROAD

BRITAIN - IS IT SONOFUSION?

Lawrence A. Crum (staff writer), "Bubbles Hotter Than the Sun," *New Scientist,* no 1975, 29 April 1995, pp 36-40.

SUMMARY

Sonoluminescence is causing more scientific interest now than it has since it was discovered over 60 years ago, and its cause identified in 1959 by Meyer and Kuttruff. In acoustic cavitation, ultrasound waves passing through a liquid cause bubble formation and collapse, the gas inside the bubble is greatly compressed and heated to a very high temperature and light is emitted. Andrea Prosperetti (Johns Hopkins Univ.), using sophisticated computer models of bubble collapse, calculated that the gas in the bubbles could reach temperatures around 7000°K, approximately the same as the Sun's surface.

Understanding exactly what was happening in sonoluminescence was a problem because so many bubbles were in action at the same time that observing only one was impossible. In 1990, Felipe Gaitan, a grad student at U. of Miss., came up with a system that could contain a single "levitated" sonoluminescing bubble for examination. By adjusting the sound field in opposition to the buoyancy of the bubble, he was able to keep the bubble in a fixed position in the liquid. By finding just the right conditions of ultrasound and gas dissolved in the liquid, he eventually had the bubble glowing like a tiny star.

In 1991, Seth Putterman et al. at the U. of California replaced Prosperetti's predictions with even more startling ones. Instead of the light flash which lasted 20 billionths of a second, Putterman discovered that they lasted less than 50 trillionths of a second, and the spectrum of light emitted showed that the temperature inside the collapsing bubble was not thousands of degrees, but tens of thousands. To explain this, Wu and Roberts at UCLA used the suggestion made by Peter Jarman in 1960, that a shock wave developed inside the bubble was responsible for heating the gas. This shock wave theory would provide for a higher concentration of energy and therefore higher temperatures.

Last year, Robert Hiller of UCLA discovered that **the presence of noble gasses in the atmosphere make the luminosity increase by a factor of nearly 30**. They are still not sure of the cause of the change. But these extreme conditions have raised a question of the possibility of nuclear fusion occurring in the bubble itself. Mathematical calculations have shown the range of temperature in the collapsing bubbles could be brought up to several million degrees, with pressures equally enormous. Even if the fusion possibility is null, these new findings about sonoluminescence are sure to open up many avenues of research for quite a while to come.

Summary by D. Torres

BRITAIN - MORE SONOCHEMISTRY

Kenneth S. Suslick (staff writer), "Sounding Out Chemistry," *New Scientist*, no 1975, 29 April 1995, pp 38-39.

SUMMARY

Because of sonochemistry's acoustic cavitation, it has many applications that are useful in other areas of research and technology. Because of the intensity of the heat and pressure produced and the extreme rapidity of the heating and cooling cycle, sonochemistry is an exciting field of study. In amorphous metals, sonochemistry facilitates the super-fast cooling that inhibits the formation of crystalline structures in the metal, thus enabling the metal to have unique electronic and magnetic properties and resist corrosion. This process is used to form super-small amorphous metal powders, which are used in making unusual materials at low overall temperatures. For instance, pentacarbonyl is used with ultrasound to produce amorphous iron (an active catalyst used in converting carbon monoxide from coal into liquid fuel). Magnetic measurements reveal that amorphous iron is a very soft ferromagnet, that is it quickly forgets its original magnetization and accepts a new one when a magnetic field is applied.

In another field, sonochemistry is known to yield hydrogen and hydrogen peroxide from aqueous solutions. Recently Peter Riesz, of the U.S. Nat. Inst. of Health, proved it also

yields the hydroxyl radical, an extremely potent oxidizing agent normally found in flames. The extreme temperatures of cavitation produce flame-like conditions inside the water, which break the water's hydrogen-oxygen bond and form the hydroxyl, which is usually very difficult.

Ultrasound can be used to substantially increase the speed of reactions in metal surfaces, which has made it an important technique in many chemical reactions. The shock waves generated by the cavitation collapse is useful too. When used in the presence of metal powder, they cause the particles to smash together at such high speeds that they melt at the points where they hit. Such treatment can cause striking changes in surface texture, composition and reactivity in the powders.

Sonochemistry can be used to split polymers dissolved in organic solvents. The shock waves mechanically split the polymer chains. This process has been used in the synthesis of block copolymers. Ultrasound has been used for synthesizing biomaterials such as bonding together protein molecules to make shells around micrometer-size spheres. Being smaller than red blood cells, these microspheres can then be used to carry drugs or medical imaging agents throughout the body. This application was recently used to make a long-lived hemoglobin suspension that can act as a blood substitute to carry oxygen where no regular blood is available.

Summary by D. Torres

BRITAIN - EXTRAORDINARY TECHNOLOGICAL BREAKTHROUGHS

Courtesy of the author.

Carl Frankel, (U.S. Contributing Editor), "Techno Star-Gazing," *Tomorrow*, [issue info missing] pp 73-75.

EDITOR'S SUMMARY

Frankel discusses three new technologies that are destined to change our lives: cold fusion, nanotechnology, and zero-point energy. Cold fusion is alive and well, Frankel reports. He quotes Moray King as saying, "You could shoot Pons and Fleischmann tomorrow and it wouldn't make a difference." [It might not be Pons and Fleischmann's choice.] Frankel says, "**By and large, the mainstream scientific community has turned a blind eye to these developments -- nowhere more than in the U.S**. This is difficult to explain, given scientists' professional commitment to objectivity and rationality." Frankel did not mention that those academic institutions that are heavily supported by government funds are more committed to grant lobbying, preservation of current dogma, and avoidance of controversy. The discovery of new science is not the driving force in academic institutions. Fortunately there are a few like Hal Puthoff, who strive to remove the dogma and reveal new truths.

The work by Hal Puthoff is cited by Frankel, especially his work in describing a better model of zero-point energy (space energy). Puthoff's "One-Watt Challenge" is discussed. Frankel states that with space energy, "[if] little by little, a credible foundation is being laid -- commercial applications are likely to be with us soon. Jeane Manning anticipates that within ten years..."

Nanotechnology -- the use of micro-miniaturized materials, devices, and systems -- is the third topic discussed by Frankel. Japan is investing $200 million into nanotechnology over the next ten years. Some nano-devices are proposed to be **built from the space up, by the controlled assembly of atoms and molecules**. Some of these devices or products will be smaller, lighter, longer-lasting. [If you want a scenario of what might happen in nanotechnology, just review the history of the growth and development of genetic engineering and see the enormously capable and effective systems that have been developed.] Frankel ends with, "Improbable and melodramatic as it may seem, the technological calvary may be headed our way. At this very moment, it may be just over the hill, just on the other side of the millennium." An expressive statement, but in this editor's opinion, Frankel ended up on the wrong side of the millennium.

CHINA - SOLVING THE "NO RADIATION" PUZZLE

XingZhong Li (Dept. Phys., Tsinghua Univ., Beijing, currently at Dept. Chem., Univ. Hawaii), "Solving the Puzzle of Excess Heat without Strong Nuclear Radiation," paper courtesy of author, presented at ICCF-5.

AUTHOR'S SUMMARY

Five experimental evidences show that the excess heat is from a nuclear source with a life-time of 10^4 seconds. This life-time is shown to be related to the barrier penetration number, θ, in terms of the resonance penetration theory. The boson nature of the deuteron ion (D^+), and the deuteron energy band structure in lattice, play the critical roles in filling the corresponding narrow resonance energy level. Prof. J. Huizenga's challenge of three miracles is answered, and "excess heat" without strong nuclear radiation is a reasonable phenomenon. It predicts: (1) there must be a

critical loading ratio; (2) the greater the grain size and the activation energy are, the better the reproducibility.

FRANCE - REPORT ON ICCF-5

Olaf Sundén (Divonne), "Report on ICCF-5," *"Cold Fusion,"* issue 10, pp 20-24.

A well worth reading report of the doings at ICCF-5 is written by Olaf Sundén, giving the highlights of the conference. Sundén covers comments on old and new methods of cold fusion experiments, the Patterson Cell demonstration, discussion of theory(s) and their relation to QM-QED (quantum mechanics, quantum electrodynamics), and new solid systems (i.e. perovskites).

He made a point of the Section 6, New Developments, which considered things such as sonoluminescence and ultrasonic effects, centripetal energy and wave manifestations -- an area not well trodden by past physics. Sundén says, "We here meet the profound and superstitious belief, often displayed in modern physics and QM, that an inherent wisdom exists in dead mathematics. But what really happens at the center of a centripetal wave is much more complex and intriguing, and it is a lesson to physics that we, not even after fifty years, are able to explain the phenomena."

JAPAN - TRAPPED NEUTRON MODEL

Hideo Kozima and Seiji Watanabe (Dept. Phys., Shizuoka Univ.), "Nuclear Processes in Trapped Neutron Catalyzed Model for Cold Fusion," *"Cold Fusion*," issue 10, pp 2-7.

AUTHORS' ABSTRACT

Results are given of detailed calculations for 1) the probability of channeling for particles generated in n-d and n-p fusion reactions, 2) the fusion probability of a triton generated in n-d fusion with a deuteron, and 3) the fusion probability of a deuteron accelerated by n-d elastic collision with another deuteron. Many neutrons are generated in successive reactions of d-d fusion reactions triggered by trapped thermal neutrons, sufficient to explain experimentally observed anomalous excess heat, neutron bursts, and tritium anomalies in optimum situations. The results confirm preliminary estimations used in the previous works.

RUSSIA - NEW SCIENCES SPOTLIGHTED

Courtesy of Alexander Frolov

The International MegaScience Academy (IMSA) is located in Petrozavodsk, Rep. of Karelia, Russia. We have recently received some information about this Russian organization that was begun in December of 1991. Its president is Mr. Victor M. Jurkin, and it has representatives in Moscow, St.-Petersburg, Kiev, and Tumen. Dr. Frolov has sent us the following information:

"Main activity in next directions: system optimization of infrastructures, energetics, ecology, international megascience and educational activity, and realization of a unified theory of World.

"Mission of MegaScience is optimization and correction of world science according to Laws of Natural Correctness, Global Ecology, Transfer of Humanity to Space Mentality. [getting ready for space travel]

"Business activity of IMSA: international trade in high-technology, "know-how" and patents, science conferences, introduction of new technologies."

Institutes of IMSA

"1. The Institute for General Theory, Russia, Rep. of Karelia, Petrozavodsk. Unified theory of World, unified algorithm of science (spectrum science), unified knowledge. Director Mr. Victor M. Jurkin.
2. The Institute for System Optimization of Infra-structures. Moscow. General theory for optimization. Ideal social models, state models, World models. Systems for utilization [sic] of social evil. Director Mr. Anatoly A. Ovseitsev.
3. The Human Institute, Petrozavodsk. General theory for widening of human possibilities. Training, education, culture, art. Religion, spirituality. Synthesis. Director Mr. Alexey M. Popov.
4. The Institute for Trans-World Communications, Moscow. Multidimensionality. Plurality of Worlds. Experience for transworld communication. Director Mr. Michail S. Eltsin.
5. The Institute for Free-Energy, St.-Petersburg. General Theory for Free Energy. Systems for controlled generation of free power from spatial medium.
6. The Institute for Free-flow operative hydroenergetics, Petrozavodsk. General theory for Energetics of Free Flow. Systems for controlled generation of electrical power by means of free hydro-torrent. Director Mr. Yury M. Novikov.

7. The Institute for Forces, Petrozavodsk. Forces. Operation. Paradox. Parallelity. Trans-world. Director Mr. Victor M. Jurkin."

D. ARTICLES BY READERS

DEFENCE AND THE AETHER

By Harold Aspden, U.K.

It has been my experience that scientists involved with missile and satellite communication rely on mathematicians who calculate distance according to the theory of relativity. Such errors as do occur are not attributed to a false theoretical basis, because relativity is the accepted doctrine which has displaced the aether. Yet, in our search for a new energy source, many of us know that the aether with its hidden energy is the only hope we have of succeeding in that quest. So long as scientists in general persist in ignoring the aether, so the research training of power engineers will cause them to shun our efforts in the forum of 'new energy'.

It is therefore appropriate to mention and applaud an item of news emerging from the Electronics and Surveillance Research Laboratory of the Department of Defence in Australia.

In a Research Report approved for public release and circulated officially to a select group of overseas government departments, university libraries and a few academics (including myself), the stance has been taken that relativity is wrong and that aether-based treatment of space and time suffices to establish intra and inter-frame relationships in electrodynamics. The Research Report advocates 'the return to pre-Einsteinian physics', a rather startling proposition for recipients at Princeton, Stanford and Yale Universities, but perhaps more palatable for recipients at M.I.T. and the Naval Research Laboratory in Washington! The reference follows:

R.S. Edgar (Electronics & Surveillance Research Laboratory), "Field Analysis and Potential Theory," Australian Department of Defense report (PO Box 1500, Salisbury, South Australia 5108).

AUTHOR'S ABSTRACT

An aether-based treatment of space and time measurement is employed to investigate the rate of a moving clock, to develop doppler formulae, and to establish intra and inter-frame relationships in electrodynamics.

THE WHALE-OIL SYNDROME

By Hal Fox

When lamps were lighted by whale oil rendered from the stripped blubber (fat layer) of millions of whales, everyone enjoyed their high-energy standard of lighting. Then the early equivalent of today's environmentalists began to warn the people that the number of whales were rapidly being depleted. **"Oh pain! Oh Grief!"** wailed the users of whale oil, **"What will we do to light our homes?"**

Then Came "Coal Oil": Before all of the whales puffed into the smoke of our lamps, it was discovered that a burnable oil could be obtained from coal. **"Oh joy! Oh bliss!"** should have been the changed cry, **"There is plenty of coal to supply our blessed light."** However, coal could be used for other things and with the industrial revolution, cities like London became smoke-filled and noxious. Cleaner and better methods were needed.

Then Came "Town Gas": Some inventor found that by closing down the oxygen flow to a bed of burning coal the incomplete combustion created carbon monoxide which with added steam, produced methane gas. Then we laid gas lines in our towns and lighted our homes, offices, and factories with "gas".

Then Came Edison: Even if he had to try several hundred things that didn't work, Edison found that a tungsten filament in an evacuated glass bulb would provide better (and often safer) illumination. Therefore, before we ran out of coal, we had better lights. However, electricity was good for lots of things and the proliferation of the use of fossils fuels has now become an international ecological problem. Of course, in Edison's day, even the *New York Times* proclaimed the electric light as being impractical.

No one seem to remember that when problems occur, new solutions are found. We project the present into the future with little regard to technological changes and new inventions. This is the WHALE-OIL SYNDROME.

Now Some Whale Oil Syndrome Examples: In the *Wall Street Journal Europe* for Tuesday, April 25, 1995 (page 2) an article by James Tanner appeared. "IEA Predicts Oil Use Will Rise Substantially Over the Next 15 Years" is the title. The International Energy Agency, based in Paris, updates its long-term energy demands to show that world oil consumption will rise to more than 75 million barrels a day by the end of the decade and reach 92 to 95 million barrels a day by the year 2010. Current oil use is 68 million barrels a day. **Nothing in the projections by the**

IEA allow for the use of new technology. The Whale-Oil Syndrome causes great speculation about how to solve the problem where the oil demand outstrips the supply.

Second Example: In the April, 1995 issue of *World Energy Update*, published by the Bell Helicopter Textron, Inc., is a chart of Total World Oil Demand Outlook and Capacity, 1980-2010. This chart shows that the total world oil **production capacity** will increase to the year 1999 and then level off at an estimated 80 million barrels of crude oil production per day. However the **oil demand** is projected to exceed the supply in about 2002 and continue rising. No forecasting is apparent in these projections for the increasing use of alternative energy beyond the small amounts of wind, solar, hydro, and hydro-thermal energies that are already invented and being gradually exploited. Here again, is the Whale-Oil Syndrome.

Third Example: From an April 24, 1995 letter from Norman Wooton, "...we have proceeded with additional independent testing [of the MRA] with the following results: Scientific Atlanta, Atlanta, Ga. [found] solid 10:1 over-unity; Concordant Technologies LLC, Atlanta, Ga [found] solid 10:1 over-unity; Georgia Tech University, Atlanta, Ga. [found] solid 18:1 over-unity (two full days of testing). The problem: [scientists] cannot determine the source of the anomalous power gains using classic EM theory **therefore will not publish a formal report with their names or facilities identified.** Whale-Oil Syndrome.

SCIENTISTS AND ENGINEERS ALSO SUFFER

Even those whose training is heavily involved in invention and discovery are subject to the Whale-Oil Syndrome. Our most recent example is the intense rejection of cold nuclear fusion by the hot fusioneers who have been working on hot fusion development for the past 40 years. Even many of the world's leading nuclear scientists are so secure in their knowledge of plasma dynamics that they reject evidence of different nuclear reactions in a metal lattice in an electrochemical cell. **Note that those forecasting energy use give little or no credit to the future successful development of hot fusion power sources.**" These are engineers and scientists who are fearful of signing test results because they may be criticized by their peers. They are no longer primarily interested in the advancement of science!

Many years ago I noted the following quotation on a small card in the London Museum of Science, **"No one can invent everything. Everyone can invent something."** Many, and probably most, scientists and engineers are comfortable with their learning. They do not want to unlearn or relearn. It is easier to deny than to discover. **But don't be overly quick to criticize and condemn some engineer or scientist who won't accept your own learned view of reality. It was always thus.** Even Aaron, the brother of Moses, went back to the golden calf when his brother stayed too long on the mountain. There are few leaders. Congratulate yourself if you are one of them.

> **By mid-career many scientists are not working for the advancement of science but for the advancement of self.**
>
> __Thomas van Slandern

Our collective job is not to convince all of the world that we have new discoveries. We will only be able to convince those who are amenable to change and discovery. **Our collective job is to discover, share, design, build, test, and produce the new energy devices that will change the world for the better.** It is better to build a new energy system than curse the deniers.

Few new important discoveries have been peer-reviewed into production. Few new discoveries have come from large industrial or government laboratories. Most new discoveries are made by people working outside the field in which they were trained. New insight rather than studied acceptance is the route to discovery. Be skeptical but willing to try, test, and learn. **Don't succumb to the whale-oil syndrome.** As Sir Isaac Newton said that we stand on the shore of an ocean of knowledge and are playing with a few pebbles on the beach. Go find some more and brighter pebbles as Wooton and McClain have done.

E. LETTERS TO THE EDITOR

LETTER FROM ICCF5

Papers from all registered attendees (preliminary and final) of ICCF5 are being considered for publication in the proceedings. All contributions that we have received have been sent out to referees.

Professor Fleischmann (who is away at the present time) is in charge of the disposition of all the papers, which he has with him.

The final submission of papers was May 1, 1995, as was clearly explained to all participants. If yours is late, I would recommend you sending it immediately.

The proceedings will be published two to three months after the publisher receives the final manuscript. The manuscript will be sent as soon as all of the papers have been reviewed, corrected, edited, and collated. Professor Fleischmann has committed to finish this task as soon as possible as he thinks the work should be published as soon as possible.

All finally registered attendees of ICCF5 will receive a copy of the proceedings at no further expense. The distribution price is up to the publisher, and cannot be decided until the size of the final manuscript can be determined.

Best regards, Jaques Payet

LETTER FROM EUGENE MALLOVE
Published as part of a full page advertisement in *The Tech* (MIT newspaper), vol 115, no 27, Fri., 9 June 1995, p 19.

An Open Letter
Dear Graduates and Friends of MIT:

Do you know that a U.S. corporation's portable ultrasonic reactor has created helium-4, helium-3, and hundreds of watts of excess power from palladium foils in heavy water -- reproducibly? Do you realize that tritium is now being generated -- reproducibly -- from palladium and deuterium in cold fusion experiments at Los Alamos National Laboratory? Dozens of other laboratories have also generated tritium in chemical environments. Imagine the dismay of the nuclear physicist in Texas -- a skeptic -- who was startled to observe numerous radioactive transmuted elements in palladium electrodes from his cold fusion experiments! Are you aware that Japan's MITI and numerous Japanese corporations are developing "New Hydrogen Energy," i.e. cold fusion?

Do you know that a university physics group in Italy is working with Fiat Corporation on a high-temperature process in which nickel and hydrogen have liberated hundreds of megajoules per mole of material -- with no sign of an upper limit to energy release? Do you know that several commercially available devices exist (in the United States and in a province of the former Soviet Union [Moldavia]), which generate intense cavitation in water and produce continuous excess power in the multi-kilowatt range, in some cases over 400% excess over input power? These units are already heating buildings and are beginning to be exported to foreign countries.

If you did not know about these astonishing developments please educate yourself by reading about them in the pages of *Infinite Energy*! To be sure, these facts are highly disturbing to those with knee-jerk reactions to data that they can't explain with existing theory. The phenomena are now absolutely confirmed, we lack only a firm microphysical explanation. One of the greatest paradigm shifts in the history of science is occurring **right now**.

That is the good news. And now for the bad news: In 1989, after the announcement of `cold fusion' at the University of Utah, certain members of the MIT community gave MIT a very bad name as a "bastion of skepticism" against cold fusion. What if in 1903-1908 prominent members of the MIT faculty had attacked the Wright brothers as incompetents and frauds and what if they had defended their government grant for hot air balloon experiments against the invention of controlled heavier-then-air flight?

Think about it.

Sincerely,
Dr. Eugene F. Mallove
MIT '69 (Aero/Astro)

"Let us hope that in a decade or two, or at least, just before the beginning of the twenty-first century, the present meager years of theoretical physics will come to an end in a burst of entirely new revolutionary ideas similar to those which heralded the beginning of the twentieth century."
George Gamow, Russian-American physicist, 1904-1968

NEW PHYSICS ON AMERICA-ON-LINE
Courtesy of Samuel P. Faile

Subj: some files for new physics
Date: 95-05-07 04:23:11 EDT
From: SChris8588

Many of these articles or papers or book chapters include email addresses of authors and other sources.
This file will soon be available for downloading on AOL. (America On Line)

NUPHYSIC.ZIP [ZIP is a text compression program.]

This compressed file contains 1,776,308 bytes total uncompressed, 682,917 bytes total compressed. 57 files

BASICS.TXT spherical electromagnetic quantum
VACENRGY.TXT vacuum energy application from Bearden
VOID.TXT why matter, why quarks, etc.
ZPENRGY.TXT zero point and free energy theory
ZPGRAVTY.TXT zero point energy as energy source
NEWGRAV.TXT gravity in terms of an inflow of matter into material bodies
NEWMATTR.TXT why matter exists
NEWQUANT.TXT new hypothetical properties of elementary particles
NONLOCAL.TXT faster than light communication, loop-holes in quantum mechanics
LAWS.TXT laws, rules, principles, effects, paradoxes, limits, thought experiments
LEWIS.TXT EVs, ball lightening, CF. plasmids etc. a new set of phenomena
QUANTUM.TXT reality as described by quantum mechanics
KEELY.TXT discussion of Keely's work in 19th century aerial craft
KEELYLAW.TXT Keely's law of sympathetic vibrations
CHEINIE.TXT 82,000 reward for proving Einsteins theory of-special relativity
HYPRHOLO.TXT The universal hologram
GRAVAC.TXT The sun is a shell enclosing an absolute vacuum
GRAVGEN.TXT Gravity wave generator, how to alter spatio-temporal continuum
GRAVKIT.TXT resonant gravity field coil (how to manipulate reality in 530 sq inch area) dangerous stuff to build at home.
GRAVQUES.TXT Chapter III, gravity, light and force, nature of gravitation
GRAVRES.TXT objection to mass/velocity relationship hypothesis
GRAVWAV.TXT all about gravity waves
DEPALMA.TXT extracting electrical enrgy directly from space
DNOYES.ASC an encounter with DeNoyes himself
COILBAK.ASC energy amplifier (electrical)
COILBAK.GIF graphic of figure for coilbak.asc
COLDFUSX.TXT text of lively 3rd international cold fusion conference 1992
TIMLN3BG.DOS one of several texts on discussion of historical timeline
TMLN3SH.DOS
TMLN3DC.DOS
TMLN3REG.DOS
TACHYON.TXT about tachyons and their field.
TEDEM.ASC new property of matter from new model of interaction of matter and space
SONSGOD.DOS the clustering of "gods" from 700 ad to 0 BC
TEDGRAV.ASC on gravitation
TRNSLRT.TXT scalar translations
TIMESPA.TXT 3-D time and space
TIMETRAV.TXT time travel
RELATIV.TXT chapter IV relativity and the physical universe
SCALARI.TXT a look at scalar technology and one of its applications
SCALAR2.TXT scalar translators
SCALAR3.ASC scalar "detectors"
SCALRWAV.TXT the cadeuces or "tensor coil"
CONTACT.TXT excellent source for contacts and files on this kind of stuff
SPIRAL.TXT the genesis factor
SSC.ASC superconducting super collidor
STDPHYS.TXT Chapter III, the nature of space, time and matter
STS61.TXT access the NASA space link
FREEBTU.TXT. defense of free energy and feasibility.
TESLABIO.TXT biography of Tesla
TESLA1.TXT wireless transmission of power
TESLA5.TXT greatest hacker of all time
TURBINE.TXT Tesla's bladeless turbine
TESLANWS.TXT news about the Tesla society
TESLAQWK.TXT Tesla's ideas enumerated
FREENRGY.ZIP Bearden's earlier paper and graphics on applying free energy

courtesy of Sylvester Christie, P.O. Box 154, Berkeley, CA 94701-0154
(510) 204-0631/fax days, data evenings. Schris8588@aol.com

TECHNICAL BULLETIN BOARD
Subj: Money, Money, Money
Date: 91-12-22 19:53:17 EDT
From: EllenM1

The numbers for a few of the technoid BBS's are as follows:

KeelyNew BBS (214) 324-3501
OuterLimits BBS (304) 327-7452
Tesla BBS (719) 486-2775
Wierdbase (314) 741-2251

Of course, they all have massive lists of numbers online which you can download.

By the way, there are groups like Gerard K. O'Neill's Space Studies Institute (P.O. Box 82 Princeton, NJ 08542) that have come up with creative processes for "bootstrapping" themselves into a position to do major development on their chosen projects.

LETTER TO THE EDITORIAL PAGE EDITOR, DESERET NEWS

Dear Editor,

During the past ten days several similar articles have appeared in the local and national media including **"Lead Pollution May Delay Wide Use of Electric Cars."** (Deseret News, May 21, 1995, page M-7). The subheading warns, "**Study finds that smelting of metal for the batteries has toxic consequences**." Not since the days when knights practiced their jousting have we seen any better use of "straw men". The information about the use of lead in electric automobiles has been attributed to a spokesman for the Chrysler Corp. The facts are that no major automobile manufacturer is proposing the use of the heavy and relatively inefficient lead-acid storage batteries for electric autos. For example, General Motors has invested in the nickel/nickel-hydride battery.

There has been considerable government funding for the development of new battery technology for use in electric vehicles. New types of batteries are now either under development or being produced and marketed in Russia; Minsk, Belarus (licensed to a Utah company); Kiev, Ukraine (licensed to a Canadian company); Troy, Michigan; New Hampshire, Texas, and at several other developmental laboratories. In general, the newer batteries provide from two to three times as much electrical power per pound of battery weight; are much faster to recharge; and can accommodate the thousands of charge/discharge cycles necessary for use in a well-designed electric automobile. In mass production, the combination of batteries, the greatly simplified automobile engine (an electric motor), and battery charger will be less expensive to produce than the current polluting, fossil-fuel-burning internal-combustion engine.

It is understandable that the large automobile companies are reluctant to obsolete their huge investment in the production of internal-combustion engines. It is even understandable that they would promulgate straw men to mislead the public. However, we the public, are neither stupid nor gullible. We would suggest the involvement of your science editor in reviewing and commenting on this important issue. One of the suggested commercial applications of the new non-polluting cold fusion devices (now being commercialized) is for use as on-board battery chargers.

Sincerely,
Hal Fox, President, Fusion Information Center, Inc.

H. MISCELLANEOUS AND MEETINGS

THE COMMERCIAL COLUMN

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

COMPANY: PRODUCT

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

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

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

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

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

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

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

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

INFORMATION SOURCES

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

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

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

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

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

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

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

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

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

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

MOLDAVIAN WATER VORTEX HEATER

A company in Moldavia is producing and selling a heater which is powered by an electric motor/pump combination. The water is circulated through a nozzle into a vortex chamber where the water cavitates. Two groups have tested the device and shown it to produce more thermal energy than can be accounted for (with conventional physics) by input power expended. Claims of up to 300% thermal output have been made. Independent tests reported to *FF* have shown over 100% thermal output but have not replicated the claimed higher values of 200 to 300%. **The evidence is that there is an unknown (to classical physics) effect that is involved in the cavitation of water that produces excess thermal power.** This capability of generating thermal power deserves thorough study by the academic community. The ultimate source of energy needs to be determined. *FF* believes that the Moldavian device operates under similar physics to the Hydrosonic ™ Pump. We hope to be able to provide actual test data in the near future.

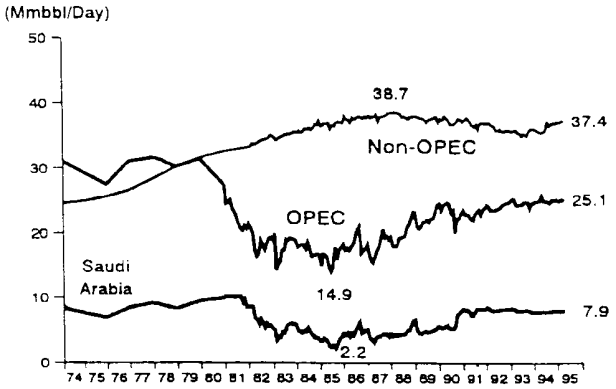
WORLD ENERGY UPDATE

Gordon B. Moody, Publisher/Editor, *World Energy Update*, May 1995, 13 pages, numerous graphs and tables.

EDITOR'S COMMENTS

This publication is distributed courtesy of Bell Helicopter Textron, Inc. Each issue has interesting and factual summary information about the world's energy, especially for the oil industry. The first statement of this issue states, "Whether or not we have a political or economic crisis in the Middle East (which has two-thirds of all known oil reserves) market fundamentals indicate higher oil and natural gas prices as we head toward the end of the 20th century." The article also states that the new hydrocarbons in Colombia, Yemen, Vietnam, a nd Myanmar are adding to the current oil reserves that will soon be marketable.

OPEC Versus Non-OPEC Oil Production



Source: PIW Global Marine 1st Quarter 1995 Offshore Report

Source: PIW Global Marine 1st Quarter 1995 Offshore Report

An interesting graph of OPEC versus Non-OPEC oil production shows that the OPEC oil production has varied from 31% in 1974 to a low of 14.9% in the mid-eighties to a current 25.1% of the world's oil production. The Non-OPEC production has varied from about 25% in 1974 to a high of about 38.7% in the mid-eighties to a current value of 37.4%. Saudi Arabia accounts for about 9% in 1974, a

low of 2.25 and a current 7.9% of the world's oil production. These three major groups of oil producers provide over 70% of the world's oil production. The current trend appears to favor the further development of Non-OPEC production.

The world dynamics of oil consumption is shifting from the U.S. and Western Europe to the Asian-Pacific regions. OPEC is no longer setting world oil prices. The world's free market forces are now in effect as the world demand for energy grows. In some places the ownership of oil reserves have shifted from the countries of oil origin to countries that could pay to buy out the reserves (such as Japan.) More than 80% of the new refinery capacity is slated for construction in Asia and the Middle East. Oil companies have increased their earnings and have allocated an increase in capital spending for 1995 (about 12% higher than 1994.) The major impact of cost on capital spending in the increasing demand for more stringent environmental standards world wide.

As cold fusion and other enhanced energy devices and systems become commercialized, there will be an impact on the oil and gas industry. The impact will be gradual but over the next decade there will be a potential for enormous changes in the way the world produces and markets energy production and use. The information from sources such as this World Energy Update will provide a greater understanding of the enormity of the energy market that we seek to supplant. Oil and gas will still be a huge factor in the world's economy not only for this decade but for the 21st century because of its critical importance for use a chemical feedstocks.

Thot for the Day

If you can't do
what you enjoy
then enjoy what you do...
(or change jobs.)

Hal Fox

RUSSIAN CONFERENCE ON COLD FUSION

Dear Mr. Fox,

At present we are concerned with organizing of the Third Russian Conference on Cold Fusion and Nuclear Transmutation, which is going to take place in rest-home in Sochi (on the shore of the Black Sea) during October 1-8 period.

The program of the Conference includes the following subjects:

1. Experimental research of Cold Fusion and Nuclear Transmutation with the different scientific methods and instruments;
2. Cold Fusion and Nuclear Transmutation theoretical models;
3. Cold Fusion applied technologies and devices.

We are pleased to invite you to participate at this conference and to make a report on any subject preferred by you. No preliminary abstract of the report is needed but please send us the title of your report, if it will be presented. The language of the Conference will be Russian and translation into English will be available.

If you want to take part in our Conference you should inform us by Fax until July 15, for we will be able to organize your meeting and provide you with railway tickets.

The registration fee of $500 for participants, which covers Conference proceedings, a hotel stay in Moscow and transportation by railway from Moscow to Sochi and back. If you pay before July 15, your fee may be reduced to $450. In this case, we inform you about our account number. Accommodations in Sochi must to be paid by every participant personally. The price of the room can vary from $25 to $50 per person per night. The price of the meals (breakfast, dinner and supper) is equal to $10 per day.

We will be ready to meet with you from September 28 to noon of September 29 in Moscow, if you would give us the information about flight date and number. The projected date of return flight from Moscow is October 10-11. Please inform us of your E-mail address.

Sincerely
/s/ Yury N. Bazhutov
Vice-Chairman of the Organizing Committee

/s/ Valery P. Koretsky
Coordinator of the Organizing Committee

Fusion Facts Subscription Office
P.O. Box 58639
Salt Lake City, UT 84158
Phone: (801) 583-6232 NEW FAX: (801) 583-2963

Street Address: 540 Arapeen Drive, Suite 209
University of Utah Research Park
Salt Lake City, UT 84108

***FUSION FACTS* Each Issue Mailed First Class.**
12 ISSUES.....(University or Corporate)..... $ 300
36 ISSUES.....(University or Corporate)..... $ 800

***FUSION FACTS* SINGLE ISSUES**
CURRENT ISSUES EACH..... $ 30
3 MONTHS OR OLDER ISSUES EACH..... $ 10
All back issues available.

SUBSCRIPTION REQUEST
For your convenience you can order by phoning (801) 583-6232, or **FAX** (801) 583-2963, or use the **Mail.**

Send *Fusion Facts* to:

NAME:_____

COMPANY:_____

PO BOX, DEPT:_____

CITY:_____

STATE_____ ZIP_____

Please pay with a check in U.S. dollars drawn on a bank located in the U.S. or with a Postal Money Order. Send check or money order with order and receive one extra issue free. Make checks payable to *Fusion Facts*.