



## LOW-ENERGY NUCLEAR TRANSMUTATION KIT, Model 1 (Now Available!)

**Congratulations to the Cincinnati Group!** The **Cincinnati Group** is the world's first business group to make available Low-Energy Nuclear Transmutation Kit, Model 1 or LENT-1. This kit includes the following as standard or optional equipment:

- ◆ Closed Cell, Zirconium Electrolytic Reactor
- ◆ Specially-designed Power Supply
- ◆ Full instructions for operation and evaluation of test results.
- ◆ Technical Assistance.
- ◆ RM-60 Radiation Detector and Software for PC Data Collection.

The is also a **money-back guarantee**: "This kit will produce verifiable Transmutations at Low Energy or Your Money Back."

Over one hundred experiments have been made with this kit or with similar predecessor cells. In each of at least one hundred experiments, the **before processing** and the **after processing** samples were sent to a commercial laboratory for detailed measurements. In addition, there has been considerable efforts made to ensure that the radioactive materials being tested (usually thorium) had not been deposited elsewhere in the cell or on the electrodes. This series of experiments and tests is the evidence that allows the Cincinnati Group to make a **money-back guarantee**. Several of these kits have already been ordered and will be delivered this fall. Materials are being ordered for all parts of the kit, including the power supply.

The impact of the marketing of these kits and the subsequent replication of low-energy nuclear transmutation is expected to be the following:

- ◆ The current scientific model of the cause of nuclear reactions will be modified.
- ◆ Hundreds of doctoral candidates will investigate this important phenomena and many theses will be written.
- ◆ Many corporations, heretofore interested in nuclear reactions, will become seriously involved with low-energy nuclear research.

- ◆ The previous reports of extensive nuclear by-products found in various cold-fusion experiments will receive renewed attention.
- ◆ There will be a strong interest in developing this new technology into devices and systems for the eradication of nuclear wastes.
- ◆ The end result of successful replication at leading universities will provide for an acceptance and increasingly rapid development of this exciting new-energy technology.

All of the staff at *New Energy News* highly commend the work of the Cincinnati Group for both the discovery of this new technology and for their willingness to sell the kits to the world for further replication and development.

[Note: The Fusion Information Center, Inc. is pleased to announce the signing of a non-exclusive marketing agreement with the Cincinnati Group to sell the LENT-1 Kits. See the full-page advertisement on page 23 of this issue of *NEN*.]

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### IN MEMORIAM STEFAN MARINOV

#### MY SCIENTIFIC TESTAMENT

After having walked so many years on the thorny way of truth, I became tired. My books and papers are my scientific testament.

I hope that soon the absolute (Newtonian) space-time concepts, which I restored by numerous experiments and by a simple mathematical theory, will be accepted by the scientific community as those corresponding to physical reality.

I hope that the perpetual motion machines, of which I constructed many prototypes without closing the energetic circle, will successfully be built by other people.

And if my achievements in space-time physics, in electrodynamics and in the domain of the violation of the laws of conservation will be silenced also after my death, by leaving this world I can only repeat the eternal words: *feci quod potui*.

Graz, Austria, 15 July 1997  
/s/ Stefan Marinov

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### A STRONG VOICE IS MISSING

A tribute to Stefan Marinov

Before Stefan Marinov decided that there were kinder and gentler friends to be met, he left this **Last Will and Testament** dated 15 July 1997:

My death is no person's fault.

Please notify the following of my death:

My son, Maxim Marinov, my wife Elena Kiriakova... in Sofia.

My son is a Substitute Minister of Bulgarian Industry and speaks English. My brother, Nicholas Marinov, is a resident of Sydney but presently on an extended journey through Europe. These three people are my heirs. I wrote a letter in Bulgarian to all three of them. These three letters were left open and may be read. Please kindly fax these letters, written in Bulgarian, to the fax number in Sofia, as well as all other letters left behind.

I leave three savings accounts in the following banks and account numbers: ....

I hereby request that the banks transfer these accounts to my son in Bulgaria.

All items in my apartment are left for my friend Werner Emig. ...

Please inform the following persons in Graz, Austria of my death:

[Stefan listed four names with phone numbers.]

And the following persons in foreign countries:

1. Prof. Panos Pappas
2. Prof. Umberto Bartocci
3. Prof. George Galeczki
4. Hal Fox.

Please fax to these four persons my Scientific Testament.

The books and other items left on my bed are to be handed to the persons indicated. My body is to be transferred to the Medical Faculty of the University of Graz, Austria. I thank the Austrian government for its hospitality and for conferring upon me the Austrian

citizenship in difficult times when I was a fugitive from Bulgaria.

Signed /Stefan Marinov/

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Letter from Erwin Schneeberger  
Graz, Austria, 12 August 1997,

The tragic and sad story of Stefan Marinov, who was a friend of mine since 8 months, is that he committed suicide on July 15 by jumping from an outside staircase of the library building at the University of Graz. A student, who had seen him, reported that he was standing backwards, leaning back so far until he fell down without a cry. He died on way to the hospital. Stefan left some letters in his flat, some for his local friends and some Cyrillic written for his family in Bulgaria. Although he left names and telephone numbers for the police (!), they did not inform anyone, even his son Marin Marinov who is vice-Minister of Industry in Bulgaria. So I and most of his other friends were informed nearly 2 weeks later by a journalist of a local newspaper, who had gotten an unofficial hint. I informed Professor Pappas in Greece, who had the address of Stefan's son, so he could inform him. Mr. M. Marinov came last week to Graz. He was allowed by the authorities to enter Stefan's lodging, so we got his 'scientific testament.'

For all his friends, Stefan's decision is absolutely unbelievable. He was a powerful, enthusiastic physicist with a bright smile on his face until the last time I had seen him on July 13. On this occasion he gave me his editions of *Deutsche Physik*, numbers 3 through 22, about 50 pieces each, to store it in my house, because Stefan gave up his second flat, so he had no room to keep it. But I could not realize his final intention.

There have been 2 disappointments for Stefan, his inertial-force driven vehicle is an artifact, and Ampere's formula seems to be correct, as he realized from some experiments he made with Dr. Pappas in Greece, about 2 weeks before his death. I have gotten to know Stefan on my experiments with PAGD-devices of the 'Correas', of Canada. As my efforts to replicate their system clearly show, that there is no generation of electric energy. I would ask you, if you have any knowledge of a successful verification. Thank you.

Sincerely, Erwin Schneeberger

August 8, 1997

In a letter to George Miley and other CF Editors, Robert W. Bass wrote:

I was appalled by word of Marinov's suicide. For a professed Christian (about which he and I had corresponded) this is like saying, "OK, Lucifer, you win! I give up!"

Marinov, in my opinion, was a real genius in the sense that he well understood all of the classical theoretical physics in great detail (sufficient detail to argue that historically some wrong turnings had been taken, and that Maxwell's Equations as we normally see them can be readily disproved by a **large** number of table-top Faraday/Ampere type of experiments) and yet Marinov was an exceedingly good experimentalist who invented and had built and tested a large number of VERY complicated electro-mechanical & hydro-electromagnetic devices & systems.

A native of Bulgaria (and former Assistant Prof. of Physics from 1960 to 1974 at Sofia University), on certain occasions in 1966-67, 1974, and 1977 he was forcibly confined to mental hospitals and given psychiatric "treatment" because of political dissent. In 1977 he got a passport and in 1978 lived in Washington, D.C.; later he lived in Italy and Austria. He was fluent in both English, German, Russian and other languages.

He was involved publicly with many quarrels with the Editor of *Nature*, who refused to print either his papers or his Letters to the Editor. He retaliated by securing the funds to place full-page ads in *Nature* expressing his frustration with the dogmatic attitude of the Establishment.

He claimed to have seen in operation and learned the secret of the so-called "Swiss ML converter" or TESTATIKA electrical generator [which gets free energy from nowhere], which was discovered by Paul Baumann who is the head of the 500-member Christian religious commune METHERNITHA in Switzerland, which says they generate most of the electricity for hundreds of people via such "perpetuum mobile" generators, which they are unwilling to share with this fallen world. He was supposedly the only member who did not live in the commune. He tried many times, but failed, to persuade them to share their allegedly great discovery with the remainder of mankind.

He wrote a book "Divine Electromagnetism" [available from East West Affiliates in Austria at Morellenfeldgasse 16, 8010 Graz, phone (0316) 37

70 93, for \$70 + S&H] giving his take on the flaws in classical EM as now taught and how allegedly "high-school level experiments" can flatly disprove some parts of it in favor of other versions buried in now- forgotten old literature before the present version was settled on and now handed down by the Establishment dogmatically.

He earned his living by being a groom for horses but he was a prolific writer & inventor in German and had a large following who subscribed to his journal *Deutsche Physik*. His targets were school children not yet brainwashed by the Establishment into accepting false but dogmatically-taught ideas.

He was dead-certain that he had disproved all kinds of dogmatically-taught aspects of conventional electromagnetism, (Lorentz-Ampere Force Law, speed of light, special relativity, aether, Michelson-Morley, etc..

In studying the first edition of his book, I found a mistake in vector calculus and wrote to him, but he sent me the second edition in which another mathematician had already corrected him.

He was 66 years old, but *seemed* much younger ("45 or 50") and was an extremely vital and extraordinarily magnetic, charismatic, enthusiastic and attractive person. I can understand his being "worn out" by the utterly monolithic refusal of the Establishment to listen to his allegations that he had measured aether drift and found in it the rotation of the earth (i.e. some diurnal variation). Perhaps he had measured a diurnal variation in the speed of light. The one thing I remember is that the blueprints for his numerous devices all looked very professional & convincing and the photos of his devices looked like they had really been built, yet he had evidently also spent **many thousands** of hours on extremely complicated mathematical calculations in most of which I could find no mistake. (Few theoreticians are sufficiently versatile to be electro-mechanically creative experimenters!)

He published detailed plans for a hydraulic-electromagnetic perpetuum mobile and showed photos of it in operation, but nobody "important" paid the slightest attention to him.

What a tragedy!

Sincerely, /s/

Dr. Robert W. Bass

# Fusion Briefings

## THE LEGACY OF COLD FUSION

On March 23, 1989, the University of Utah hosted a press conference to announce the discoveries of Professors Pons and Fleischmann. After a flurry of media attention, cold fusion (as it was inadequately named) was attacked by an orchestrated effort led by the same scientists who were spending over \$500 million per year on hot fusion. The end result of this effort by scientific lobbyists was the following:

- ◆ A biased recommendation of the Energy Research Advisory Board that the DOE not fund cold fusion.
- ◆ Demands for the U.S. Office of Patents and Trademarks not to allow cold fusion inventions to be patented.
- ◆ Phone calls from "Washington" informing Physics and Chemistry departments at major universities that no government grants would be made to any departments investigating cold fusion.
- ◆ With the denial of government funds, usurpation of inventors rights to patent protection, and warnings from "Washington", there was almost no corporate interest in funding cold fusion.

On August 26, 1997 several newspapers announced that the Japanese Ministry of International Trade and Industry will no longer fund **new hydrogen energy** (euphemism for cold fusion) development. A quote attributed to University of Utah physics professor Owen W. Johnson, "It's been obvious to anyone who understands anything about physics, it's a blatant fraud."

### Here is the truth and the legacy of cold fusion:

The experimental work initiated by Professors Pons and Fleischmann, first in the U.S. and for several years in France (with Japanese funding) has provided the following subsequent discoveries and developments:

- ◆ **BlackLight Power** in Pennsylvania is developing an improved technology by which hydrogen gas, a catalyst, and nickel metal is used to produce high-temperature thermal power. The shares in this company have gone from \$0.75 per share to \$1200 per share.
- ◆ **Jet Technology** in Massachusetts offers cold fusion kits using light water and specially-prepared nickel electrodes that produce from 300% to 700% more energy out than energy input.
- ◆ Piantelli, an Italian inventor, has patented a cold fusion device using special electromagnetic

features, hydrogen gas, and special alloys to provide a high temperature thermal-energy source. His work is being funded by Fiat.

◆ James Patterson, of Sarasota, Florida, has patented a cold fusion device which is now being marketed in kit form. In his laboratory, Patterson is working on the development of a kilowatt unit (now operating for several months) in which excess thermal energy is produced continually.

◆ The **Cincinnati Group** has invented, developed, and are now offering their LENT-1 (Low-Energy Nuclear Transmutation) Kit **with a money back guarantee that the user can produce nuclear reactions if the directions are precisely followed.**

◆ **ENECO** (located at the University of Utah Research Park) has recently announced a new invention which is expected to be developed into commercial thermal power units.

◆ **Fusion Information Center** (located at the University of Utah Research Park) has contracted to manufacture special power supplies for the LENT-1 and has a non-exclusive right to market the LENT-1 Kits.

Various Japanese companies are showing considerable interest in one or all of these technologies. With the forth-coming rapid development of this legacy from Pons and Fleischmann, it is understandable that the Japanese Ministry of International Trade and Industry have decided to curtail funding of **new hydrogen energy**. The good news is that it has been predominantly U.S. inventors who have solved the problems of low-energy nuclear reactions and are now offering proven products for American industry to commercialize.

With an energy market that is approaching five trillion dollars a year, it is our forecast that America will not default on this opportunity to become the world's leading developers of new-energy devices and systems. The United States has the talent to be the world's leader in new-energy devices and systems. The United States has the capital resources. **If the U.S. venture capital leaders do not get betrayed by their short-sighted view of next year's bottom line, then these leaders can greatly help U.S. industry to penetrate the world's largest integrated market: the energy market.** We will either develop new-energy sources or give away the leadership to foreign companies just as we have done with the consumer electronic equipment market. Now is the time for leadership.

**The opportunity to be the world's energy leaders is the legacy of Pons and Fleischmann!**

**REALLY COLD FUSION**

Courtesy of Steve Roen

Andrew Watson, "Sticking Point," *New Scientist*, 16 Aug 97, pp 34-37

## EDITOR'S SUMMARY

Kanetada Nagamine, working at the Rutherford Appleton Laboratory, using a pulsed beam of muons, has achieved cold fusion of deuterium and tritium and creating alpha particles. The chain reaction process is explained by using the muon (as an electron) to make a much smaller tritium atom which then fuses with a deuterium atom making an alpha particle and releasing the muon to **do it again**. One of the problems is that muons tend to stick to the alpha particles and thereby get taken out of the chain reaction. Calculations show that each muon must produce about 900 fusion events before "sticking" to be able to make a break-even nuclear fusion reactor.

*NEN* suggests that the Cincinnati Group's reactor, which transmutes thorium to stable elements in less than an hour, is a better candidate for producing thermal energy than the muon-tritium-deuterium reaction. As pointed out in the *New Scientist* article, quoting Graeme Hirst, "Fusion is normally so difficult to achieve that any process which can produce it at the laboratory scale just has to be followed up." *NEN* agrees and it is time that the scientific community recognizes that there are low-energy nuclear reactions that should be explored.

**COLD FUSION THEORY**

Hidetaka Sada (Mitsubishi Heavy Ind., Ltd., Nucl. Plant Engr. Dept., Kobe Shipyard, Japan), "Theory of Nuclear Reactions in Solids," *Fusion Techno.*, vol 32, no 1, Aug. 1997, pp 107-125, 32 refs.

## AUTHOR'S ABSTRACT

A theory of cold fusion is presented, based on the Bloch theorem. The Bloch functions are used to represent the charged reactants and products of the nuclear fusion reaction in solid-state crystals. The nuclear fusion reaction is treated as a perturbation, the validity of which is shown. Field operator formalism, or quantum field theory, is used to calculate the transition matrix elements. Density of final states is calculated based on the phonon theory. The reaction rate and fusion power output density are calculated by Fermi's golden rule, and from them it is recognized that they look as if they had no reproducibility – unless it is known that they depend on the number of the primitive cells in one crystal, the

numbers of both the reactants and products, and the degree of the effectiveness of the Pauli exclusion principle. The triggering mechanism may also have a relation with its dependence on the aforementioned parameters.

Three selection rules are derived. One of them is very important and valuable because it suggests that cold fusion is a very clean energy resource; i.e., the radioactivity level of cold fusion is extremely low and safe compared with its output power or the current fission output power. The ratio (f/t) of the production rate of  $^4\text{He}$  (heat) to that of tritons is derived quantitatively and compared with the observed value. The necessary conditions for cold fusion to occur and continue are given. Quantitative descriptions about nuclear fusion reactions in light (or hydrogen) water electrolysis are also given.

**CODEPOSITON OF Pd & D2**

Mitchell R. Swartz (JET Energy Techno., Inc., Wellesley Hills, MA), "Codepositon of Palladium and Deuterium," *Fusion Techno.*, vol 32, no 1, Aug. 1997, pp 126-130, 14 refs, 2 figs, 1 table.

## AUTHOR'S ABSTRACT

The quasi-one-dimensional model of isotope loading into a material relates the loading flux, the electrical order/thermal disorder ratio, and other physical issues. The theoretical nonequilibrium deuterium/palladium ratio at the surface of a palladium electrode, previously shown to depend on the loading flux ratio, is corrected both for intrapalladium diffusion of the loaded deuterons and for secondary changes in electrode volume, possibly explaining the often considerable time elapsed until the onset of the desired reactions.

**INFINITE ENERGY MAGAZINE**

vol 3, nos 13 & 14 Double issue  
(Received just before going to press)

March-June 1997 – a very big issue full of some of the best information yet. This one is a must-read. If you don't already subscribe, get it at your newsstand. Here is a sample of the 128 pages of knowledge contained in this issue:

Transmuting Nuclear Waste at Low Energy:  
Good Morning America interview, June 11, 1997  
Radioactivity Remediation – CETI  
Radioactivity Remediation – Cincinnati Group

Protocol for Thorium Activity Remediation  
 Low-Energy Bulk Process Alchemy  
 3rd Party Verification of Thorium Transmutation  
 Second 3rd Party Verification  
 ICP/MS Scans from tests  
 Data Chem analysis of transmutation product  
 Cold Fusion/Fission account for Remediation  
 Eagleton's Theory of CG's LENT Process  
 Cold Fusion & the Future – Economics & Society  
 4th International Symposium on New Energy  
 Update on Research of Moray & other Free Energy  
 Devices  
 Alternate Interpretation of Mass-Gain at Near Light  
 Velocities  
 Testing the Ragland Triode Cell  
 SMOT New Energy Toy  
 BBC interview with Martin Fleischmann  
 NPR "Talk of the Nation" Science Friday: Hot vs.  
 Cold Fusion  
 Champion of Aether Energy: the Robert Adams Story  
 Launching of the Catalyst Institute  
 Extracting Intermolecular Bond Energy from Water  
 Charge Clusters: Basis of Zero-point Energy  
 Inventions (paper)  
 Catalytic Behavior of One (or Two) Subquarks Bound  
 to their Nuclear Host (paper)  
 Neutrino Power (paper)  
 Work in Constant Entropy Systems (paper)  
 Hypothesis and the Equations of the Unified Matter  
 Field (paper)  
 "Washington Watch" Update: Whither Hot Fusion?

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### **ELEMENTAL ENERGY aka "COLD FUSION"**

July 1997, issue #22  
 Courtesy of Wayne Green

Wayne Green appears to be changing the name of his publication. According to his editorial in the July 1997, issue #22, he suggests that there is an interest in changing the name of the technology because cold fusion has had such a bad rap. In this most recent issue, Green's *Elemental Energy* included the following:

Janis M. Niedra, Ira T. Myers, Gustav C. Fralick, Richard S. Baldwin (NASA Lewis Research Center, "NASA Lab Report Confirms Cold Fusion Excess Heat Effect," NASA Lab Report N96-22559.

This article shows that in a 28 liter cell, an excess heat of 11 watts was produced with a 60 watt input to the cell. While not a great achievement in terms of a high ratio of energy out to energy input, this NASA report is an important contribution to understanding the reality of cold fusion using light water and nickel.

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Dan Chice, (Physics Dept., Univ. "Lucia Blaga, Romania), "Low Energy Nuclear Reactions," pp 36-39.

A very simple model involving a computer experiment to predict the energy distribution of a deuterium ion trapped in a metallic lattice is presented. The energy fluctuations are analyzed and the results are discussed in connection with the possibility of the low energy nuclear reactions in condensed matter occurring.

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Robert W. Bass, "Plasma Injection Transmutation (PIT)," pp 82-83.

Robert Bass hypothesizes a set of nuclear reactions which could produce the experimentally observed transmutation of thorium to copper-65 and titanium-50. [See also the article, "Aneutronic Nuclear Reactions" in this issue of *NEN*. Ed.]

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## **Space Energy**

### **SPACE ENERGY FOR SPACEFLIGHT**

H.E. Puthoff, Ph.D. (Inst. Adv. Studies at Austin, TX), "Can the Vacuum be Engineered for Spaceflight Applications? Overview of Theory and Experiments."

#### ABSTRACT

Quantum theory predicts, and experiments verify, that empty space (the vacuum) contains an enormous residual background energy known as zero-point energy (ZPE). Originally thought to be of significance only for such esoteric concerns as small perturbations to atomic emission processes, it is now known to play a role in large-scale phenomena of interest to technologists as well, such as the inhibition of spontaneous emission, the generation of short-range attractive forces (e.g., the Casimir force), and the possibility of accounting for sonoluminescence phenomena.

ZPE topics of interest for spaceflight applications range from fundamental issues (where does inertia come from, can it be controlled?), through laboratory attempts to extract useful energy from vacuum fluctuations (can the ZPE be "mined" for practical use?), to scientifically-grounded extrapolations concerning "engineering the vacuum" (is "warp-drive" space propulsion a scientific possibility?). Recent

advances in research into the physics of the underlying ZPE indicate the possibility of potential application in all these areas of interest.

### ZPF - INERTIA, GRAVITY, & MASS

Courtesy of Dr. Hal Puthoff

Bernhard Haisch, Alfonso Rueda, & H.E. Puthoff, "Physics of the Zero-Point Field: Implications for Inertia, Gravitation and Mass", *Speculations in Science and Technol.*, vol 20,1997, pp 99-114, 69 refs.

#### AUTHORS' ABSTRACT

Previous studies of the physics of a classical electromagnetic zero-point field (ZPF) have implicated it as a possible basis for a number of quantum phenomena. Recent work implies that the ZPF may play an even more significant role as the source of inertia and gravitation of matter. Furthermore, this close link between electromagnetism and inertia suggests that it may be fruitful to investigate to what extent the fundamental physical process of electromagnetic radiation by accelerated charged particles could be interpreted as scattering of ambient ZPF radiation. This could also bear upon the origin of radiation reaction and on the existence of the same Planck function underlying both thermal emission and the acceleration-dependent Davies-Unruh effect. If these findings are substantiated by further investigations, a paradigm shift would be necessitated in physics. An overview of these concepts is presented thereby outlining a research agenda which could ultimately lead to revolutionary technologies.

[Haisch, Rueda, and Puthoff were honored by *NEN* as "Scientists of the Year" for their seminal paper on inertia ("Inertia as a Zero Point Field Lorentz Force, *Phys. Rev. A*, **49**, 678-94). See *NEN*, February, 1994, pp 1-6.]

## Miscellaneous

### RUNNING ON FRENCH FRIES

Courtesy of Kaia and Joshua Tickell

The Veggie Van, a van that runs on reprocessed vegetable oil from kitchens that provide your french fries, was in Salt Lake City, August 17-18, 1997. Two newly graduated (and married) specialists in "Sustainable Living" from New College in Sarasota, Florida are touring the U.S. with their Veggie Van. "We want to make people more aware of what can be

done to decrease our reliance on foreign oil imports." This couple are typical of many of America's younger generation who know that there is a big problem that must be solved by their generation. We discussed how the older generation has enjoyed a high-energy standard of living and has polluted the planet and left a huge debt to be paid off by the younger generation. Kaia and Joshua Tickell are bright, informed, and dedicated members of that younger generation **and they plan to do something about it.**

The Veggie Van is equipped with a diesel engine that runs on BIODIESEL, which they make from left-over kitchen oils. In addition, the van has two solar panels to furnish electricity. The Tickells make their Biodiesel with equipment in a towed trailer. The used fry oil is filtered and then treated to provide esters and glycerine. The glycerine can be used for making soap and the esters are the biodiesel that drive their van.



The Veggie Van and the Green Grease Machine are in the process of touring with stops at New Orleans, LA; Lexington, KY; Richmond, VA; Albany, NY; Burlington, VT; Minneapolis, MN; Jefferson City, MO; Denver, CO; Salt Lake City, UT; Phoenix, AZ; Los Angeles, CA; San Francisco, CA; and Portland, OR. "By doing this project, we hope to inspire a lot of people to take action toward saving our environment", says Kaia Tickell. They were enthusiastic about a possible future trip to show off an "On-Board Battery Charger".

*NEN* salutes Kaia and Joshua Tickell. With this type of dedication from their generation, our country will be in good hands.

### 7 NUCLEAR POWER PLANTS TO CLOSE

Staff (Associated Press), "Ontario Agrees to Close 7 N Plants Near U.S. Border," *Deseret News*, 14 August 1997, page A4.

Ontario Hydro, an Ontario state owned public utility, will close seven reactors that are within 100 miles of the U.S. Canadian border. The closures are a result of long-time inadequate maintenance. The plan to close these reactors is expected to cost several billion dollars. A report of the "deep and wide" problems resulted in the resignation of the president of Ontario Hydro. The end result of the closure of these plants will be an increase in the burning of fossil fuel.

Problems, in various parts of the world, with nuclear power plants has greatly curtailed the building of such plants, especially in the United States. Nuclear power proponents cite the safety record (one of the best in any industry) and the reduction in pollution caused by the burning of fossil fuels. Among the industrial leaders, who should be planning for new-energy sources to replace both nuclear power and the burning of fossil fuels, there is little evidence that these leaders have any idea of the developments that are occurring in new-energy technologies. *NEN* readers are aware of several developments that appear ready for commercialization. The biggest problem is lack of support from both governmental and industrial leaders. **Soon the people will demand a change as further evidence of new-energy sources is published.**

#### DOD - WHO ARE YOU GOING TO BOMB?

Lorraine Woellert, "Nuclear power plants may get new life in bomb production," *Washington Times*, 19 August 1997, page B-1.

The Energy Department has asked electrical power utilities who are operating nuclear power plants to bid on the production of tritium. Tritium is the product that makes an H-bomb from an A-bomb. In addition, the DOE is proposing that these nuclear electric power plants begin burning plutonium as a fuel.

Essentially this proposal would put into civilian hands the necessary ingredients to make H-bombs! *NEN* strongly suggests that with the new discoveries of how to stabilize (transmute) radioactive materials to stable elements and the new discoveries of low-energy nuclear reactions, this is not the time to provide additional H-bomb materials to be obtained by terrorists organizations.

Why make more tritium? Who is DOD going to bomb? Haven't we had enough uncivilized destruction of persons and property by the nuclear weapons? Are we ever going to become sufficiently civilized that we can negotiate peace in the world?

# Articles

## COSMOLOGY NOTE

Greg Hodowanec

GH Labs, Newark 4/10/97

### I. GW Signal Detector Unit (Demo Ckt. A)

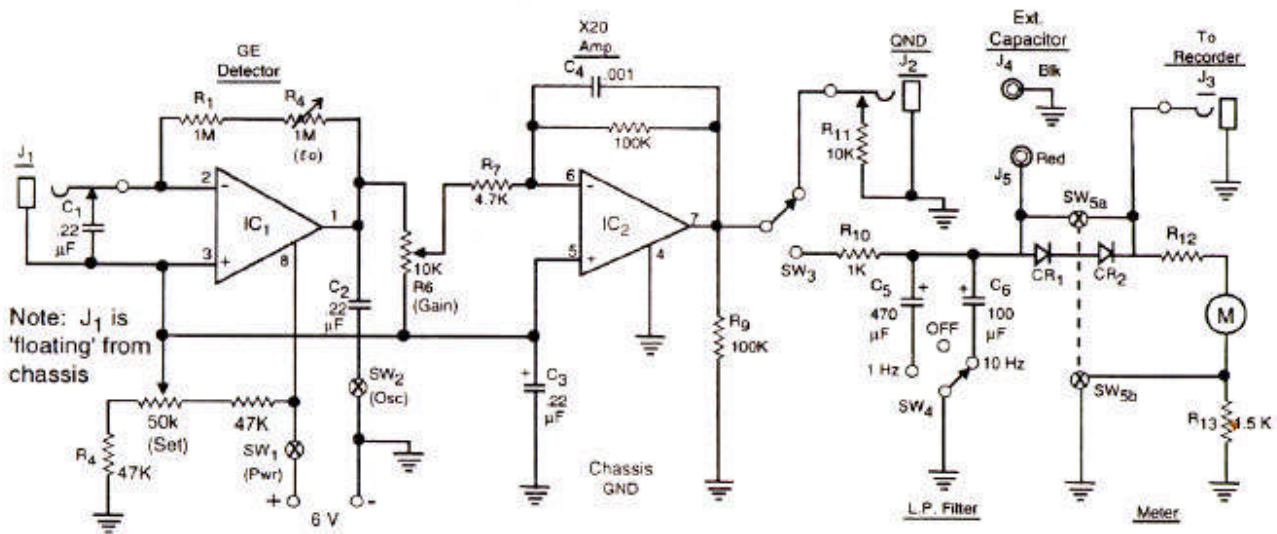
This demo unit was intended to illustrate *some* of the many possible responses to be noted with the basic GW signal detection system. To facilitate the obtaining of electronic parts by many amateur scientists and electronic experimenters, the unit was designed around readily available Radio Shack parts. As a result there are some *limitations* to this unit, but it will still serve as an introduction to the many GW-type observations possible. No attempt was made to carefully layout the proposed design (see attached schematic) and the breadboard prototype unit was quickly hard-wire fabricated inside a 5-1/4" x 3" x 2-1/8" aluminum P-Box available from Radio Shack. A more detailed operation procedure will be supplied after the prototype unit has been more carefully evaluated. For those who may wish to try fabricating this unit (or portions of it) from this account alone, some brief remarks on its operation will be given here.

A. The unit has a built-in .22  $\mu$ F Mylar printed circuit type capacitor as the primary sensor device. However, provisions were made for insertion of other external detection devices. The internal sensor device may be used in both QND (Quantum-Non-Demolition), and the Gravimeter modes of operation, selectable by a panel switch, SW<sub>3</sub>.

You are referred to my many previous articles and notes for more information on these modes of operation. For the QND mode of operation, the gain control is kept at about the 1/2 level (or less) position only to keep from over-driving the x20 internal amplifier stage. The QND output is connected to an external audio speaker-amplifier unit, preferably with a low impedance input (order of 5K to 25K ohms). In the QND mode, the unit will respond to the numerous supernova 'bursts' in the Universe which will 'ring' the detector in the range of about 400 to 800 Hz, depending on the setting of control,  $f_0$ . If the OSC switch, SW<sub>2</sub>, is closed in this QND mode, the unit will become a gravity-signal-sustained sine wave oscillator over this same frequency range. If the x20 amplifier stage is driven hard with the gain control, the sine waves will 'clip' and thus a useful square wave type output will become available. These responses



## GW Signal Detection Demo Unit (Experimental Model A)



Note: J<sub>1</sub> is 'floating' from chassis  
 All resistors 1/4W, 5 %  
 All electrolytic capacitors can be 10V units.

IC<sub>1</sub> IC<sub>2</sub> : 1458 device  
 CR<sub>1</sub> CR<sub>2</sub> : IN914 Type diodes  
 M : 1 mA (0-15 scale)

Note: When SW<sub>5a</sub> is closed, SW<sub>5b</sub> is open and vice versa. This will switch between 1.5 V and 150mV scales. (DPDT switch used)

may also be seen with an oscilloscope connected to the QND output jack. Much more details on the QND mode of operation will be given in the proposed Operating Procedures for Ckt. A.

B. In the gravimeter mode of operation, the 1.5 volt meter scale is normally used (with the L.P. filter at the 1 Hz position). Since some 1458 IC devices might go into oscillation at high drive levels, the gain drive level should initially be kept at 3/4 of maximum. The oscillation may be due to the IC device itself or to excessive electrical and/or gravitational feedback from the circuitry also. A simple correction for such possible oscillation problems will be included in the proposed Operating Procedures. The meter output levels should be kept between about 1.1 volts and 1.5 volts for the gravity signal induced 'excursions' seen in this mode of operation. These 'excursions' are both active responses such as detected novae and supernovae, as well as passive responses due to 'shadow' responses caused by the presence of large dense masses on the detector's meridian position. Such detected responses are best displayed on chart recorders.

Best positioning of these responses between 1.1 and 1.5 volts will require a compromise between the set control and the gain control positions. The set control will generally be near its center position, SW<sub>5</sub> can be switched to the 150 mV range for an expanded view of these same excursions. Changing the L.P. filter switch to the 10 Hz position will allow the unit to respond to gravity variations arriving from deeper in space and thus result in 'faster' burst rates

and shadows being detected. More details on these operations will be given in the proposed Operating Procedures.

## II. Applications of Ckt. A

With the more detailed Operation Procedures for Demo Ckt. A, this unit, in essence, will demonstrate: A. QND responses and the QND oscillator mode, also the 1/f nature of the QND responses, e.g., 1/f noise.

B. Gravimeter type responses:

- Earth g-field levels (gravity meter)
- Fast astronomical responses (with Esterline-Angus recorder)
- 2-D astronomical responses (with Rustrak recorder)

C. Repeating Universe excitations

D. .25 cm microwave background response.

E. Pendulum tests (GW communications?)

F. Deep space aural responses (ETs?)

Again, these experiments will be given in detail in the proposed Operating Procedure Notes for Ckt. A.

## III. Conclusions

The purpose of this particular demo unit is primarily to illustrate some of the many aspects of GW signal detection systems. Ckt. A was designed around Radio Shack parts and thus is not an optimum design. However, it does serve to demonstrate many GW signal techniques for the inquisitive and knowledgeable newcomer researcher to this field. The layout and wiring is not overly critical, but it is suggested that the main sections of detection, amplifier, L.P. filter and metering circuitry be kept integral and separate as much as possible to avoid possible interaction between the circuitry.

See my past monograph, articles and notes for more information on this subject. Have fun and good experimenting.

Best regards to all,  
Greg Hodonowec

## COSMOLOGY NOTES 2

Greg Hodonowec, GH Labs, Newark, 4/25/97

### I. Some Operating Procedure Notes on GW Demo Ckt. 'A'

#### A. Introduction

GW Demo Ckt. Model A is meant to introduce the amateur scientist and electronic experimenter to gravitational 'wave' signal detection techniques. To facilitate this introduction, the unit was designed around Radio Shack available parts which would be accessible to many of the experimenters. However, there is price to be paid for such an approach and this is in some limitations in performance. For example, the use of the 1458 bipolar IC device in the detector and amplifier stages of the unit at a supply voltage of but six volts (to accommodate the use of a 1 ma meter (panel) with a 0-15 scale which was available at Radio Shack) will result in an actual +/- 3 volt operation of the 1458 device. This will result in an useful operating range of but about 1.0 to 1.6 volts in the actual system. If the experimenter has access to MOS devices such as the ICL 7621 and TLC 272 devices, the operating range could be the entire range of 0-3 volts. Also, recent Radio Shack 1458 devices appear to have lower gains and higher device noise figures. Perhaps some experimenters may have access to better prime 1458 devices (or equivalents) instead. This could result in better isolation between the detector and amplifier stages.

While Ckt. A is essentially an evaluation unit and thus not an optimum design, the experimenter has many leeways in the design. For example, the input sensors (capacitors) can be mounted internally and switched, and thus would be all shielded against

possible EM detection problems. Again, access to higher scale panel meters would enable operation at higher supply voltages and thus improved performance. A small trimpot of 100 to 200 ohms in series with the detector capacitor would also stabilize somewhat unstable IC devices at the higher gain levels.

The experimenter is referenced to the many articles and notes issued in the past for more information. However, as an aid to the experimenter, additional information on the operation of Ckt. A will be considered here in more detail.

### II. QND-type Operation Notes

QND (Quantum-Non-Demolition) operation is a term 'coined' by astrophysicists with regard to gravitational 'wave' detection. In essence, it simply means that the detection system will faithfully reproduce the gravity impulses being generated by the masses in the universe. Gravity signal detector Ckt. A has this very characteristic! This system is generally used as is given in Fig. 1, and thus has good low frequency responses. Radio Shack 1W amplifier-speaker unit #32-2040 is also useful here. Perhaps the experimenter already has an audio amplifier unit which may be suitable here? However, the Operating Notes as given here will apply in particular to the setup of Fig. 1.

#### A. Detection of Supernovae 'Bursts'

Ckt. A is initially set up for the QND mode of operation as follows:

Place switch, SW<sub>3</sub>, into the QND position. Place the set control to its mid-position. Place  $f_0$  in its mid-

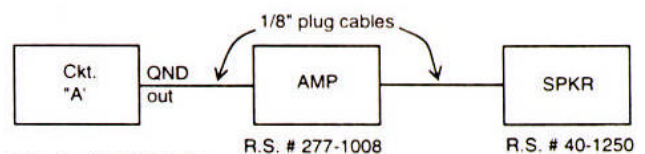


Fig. 2 : QND Tests

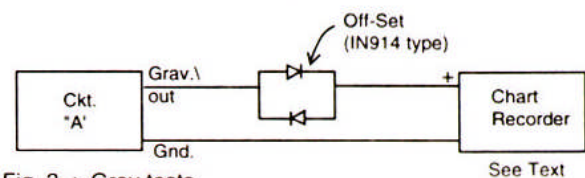


Fig. 3 : Grav tests

position. Keep the OSC switch, SW<sub>2</sub>, in its off position. Place the Ckt. A gain in its mid-position, or even somewhat less.

Connect the QND output of Ckt. A to an external audio amplifier system (such as shown in Fig. 1) but keep its gain control at about 1/4 level initially.

Turn on Ckt. A with switch SW<sub>1</sub>. The detector should immediately start responding to the numerous supernovae in the universe (the internal .22  $\mu$ F sensor being used). The supernovae 'bursts' will 'ring' the detection circuit with Gaussian-type impulses which reflect the implosion of the star to its dense nuclear core. The rings should be clean but a low-level background 1/f type noise will remain. Should a particular 'noisy' 1458 device be used, this background noise may be excessively increased. Try to find a lower noise 1458 device. The system noise should be generated in the sensor capacitor primarily. If the signals sound distorted, you may be over-driving the Ckt. A gain stage – reduce it a bit. The 'ringing' frequency of the bursts will range between about 400 Hz to 800 Hz, depending upon the  $f_0$  control position. Note that there may be an optimum response seen somewhere around 600-700 Hz.

Switch SW<sub>2</sub> to the OSC position. The circuit should now strongly oscillate as a fairly clean sinewave (if distorted, Ckt. A gain level may be too high). The oscillator frequency will vary over 400 Hz to 800 Hz with the  $f_0$  control position. Turn up the unit gain control and the sinewave oscillations will become 'clipped' with overdrive and thus the unit will develop a form of square wave. These responses are best seen on an oscilloscope connected to the QND output of the demo circuit.

### B. Some 1/f Noise-type Experiments

Using the same setup as given in Fig. 1, adjust the set control,  $f_0$  control, and unit gain control to their mid-positions. Insert a well-formed 500-2000  $\mu$ F electrolytic capacitor into the sensor jack input, J<sub>1</sub>. Turn on Ckt. A and allow a few minutes for the sensor capacitor to stabilize in charge. Turn up the volume on the external amplifier unit until a fairly loud level of 1/f noise is heard. The Ckt. A is still in the QND mode of operation but the 'ring' frequency is very low or even non-existent. You may be able to check on this by increasing  $f_0$  and possibly noting a very low frequency ringing. Some simple experiments can be tried with this particular set up:

#### 1. .25 cm Background 'Standing Wave' Pattern

Slowly move a mass, any mass, this could even be your arm, and note that there are seen slight changes in noise level every .25 cm or so. This is a very subtle response and apparently not every person may be capable of hearing it! It is pretty much like a 'picket fence' response. To remove any doubt that it

may be a real response, set in motion an 8 oz. or so pendulum several feet away. As the pendulum swings, the detector will respond to a 'modulation' due to this .25 cm structure in the aether as a 'picket fence' effect. With more careful listening you may be able to note that there is a slight change in pitch as the pendulum swings to and fro. [Bill Ramsay suggests moving your tight-fisted arm in a pendulum-type big swing will work as well as a real pendulum.]

#### 2. 'Repeating' Universe Background Responses

Using this same setup, use your arm again as the pendulum. Swing it in about 2 foot arcs at about a 1.8 to 2.0 Hz rate. Do this until you hear a very definite 'modulation' at this rate in the 1/f noise background. Then stop the swing at some maximum point. Repeat this action one or two minutes later. You may now note that this modulation will repeat at this one or two minute rate for some time after you ceased your 'excitations' – sometimes for hours! It is possible to 'cancel' these excitations to some extent by repeating the excitation but then reducing the arc lengths slowly to zero levels. But a word of caution here: the unit may also be responding to the experimenter's own beating heart and sometimes that will take over! Also, other mass movements in the area such as a washing machine with its rotary and reciprocating mass motions could also affect the detector response.

#### 3. GW Signal Communications?

The experimental effects described above will, in terms of Rhysonic theory, be universe wide! In experiment (2) above it was suggested that the 'repeating' nature of these disturbances in the aether could be somewhat negated by reducing the 'excitations' slowly down to zero. To be able to use this modulation mechanism in simple code transmissions would require that the repeating function be defeated. Thus the signal source should slowly 'build up' and then also slowly 'decay' if this repeating function is to be avoided. In the past I had looked into several techniques to do this.

One technique turned out to be quite effective – it was a simple dc toy motor. Motors, in general, require some start up time to spin and also some decay time to stop. The spinning rotor will easily set up a .25 cm disturbance in the aether, the 'picket fence' effect. In some practical tests I used a well-made double-shielded tape recorder motor at 9 volts dc. I used the system of Fig. 1 but coupled the output to a tape recorder unit instead of the speaker. This was done so that I could run remote 'motor signal' tests but would have the detector system responses recorded on tape during my absence. This experiment worked

quite well! Initial tests were made only in the general lab area and then in the neighborhood – all with good results. To identify my 'motor generated' signals, I used Morse Code modulations. Namely, I sent the message "Greg Radio" (with distance) simply by starting and stopping the motor at the required Morse Code intervals! I was able to recognize this signal in the general universe background noise signals at 500 ft. away, ½ mile away, 3 miles away, and even 5 miles (and more) away! These tests were done back in 1984-1985 and reported to only a very few colleagues. At that time I was not sure if these tests were real (without outside confirmation) and thus I did not want the aether to be 'cluttered up' with such signals like the radio spectrum was in early days of radio. I never got positive responses from my colleagues so I put this on the back burner. However, some brief local tests with Ckt. A appear to confirm my previous experiences!

#### 4. Search for Extra-Terrestrial Intelligence (SETI)

The experimental setup of this section also responds to the general universe noise background. Perhaps if ET is really out there, ET is surely using the instantaneous GW techniques in communication and not the passe EM techniques now being used. Careful listening to the  $1/f$  noise levels reveals some interesting responses which appear to be arriving from definite regions of space. Some are unusual 'repeating' simple bars of music (?) and other repeating 'tones' which could be natural in origin but are very suggestive of possible ET alerting signals. That these were most likely gravitational signals was proven in a test where the detector (which was constructed in an aluminum box) was placed in a steel container and that assembly was placed in a heavy steel cabinet – the signals persisted, whereas EM signals would have been completely eliminated. There is fertile ground for much more research here which should be of interest to all you SETI fans.

### III. Gravimeter-Type Operation Notes

This mode of operation will use the Ckt. A's L.P. Filter and metering circuits. The external audio amplifier is cut out and thus not needed for these experiments. Some typical gravimeter responses will be considered here as well as some more specialized chart recorder type tests.

#### A. Simple Gravimeter Tests

All these tests will, in general, be monitoring the fluctuations seen in the earth's g-field at the median location of the detector. These fluctuations are largely due to various cosmic 'events,' but some may be terrestrial in nature due to fluctuations in the earth's

ionosphere, for example, or even some fluctuations due to mass changes or movements within the earth itself. There is much more to be learned here yet.

#### 1. Earth G-field Monitoring

For most of these tests, the internal .22  $\mu$ F capacitor sensor is used. Ckt. A is set to the gravimeter mode (GRAV) with switch SW<sub>3</sub>. The meter is set to the 1.5 volt scale with switch SW<sub>5</sub>. The L.P. Filter is set to 1 Hz with switch SW<sub>4</sub>. Start with the SET control, the GAIN control and the  $f_0$  control at mid-range each. When Ckt. A is turned on, there may be some fluctuations seen on the meter scale. However, it may be necessary to adjust the SET control in conjunction with the GAIN control to place the meter pointer at about 1.3 volts (average). If no fluctuations are seen, increase the gain and readjust the set control to keep the fluctuations centered around 1.3 volts or so. It may take a little experimentation to keep the meter 'excursions' in the range of about 1.1 to 1.5 volts. The excursions will increase with current gain but do not go higher in gain than about 3/4 full gain (unless you have included some small resistance in series with the sensor capacitor) to avoid possible oscillations in your detector circuit. Oscillations will tend to 'peg' the meter either at the 1.1 volt or the 1.5 volt points. Reduce the gain if instability occurs. For the demo Ckt. A and the 1458 device used, about 5 ohms was required to stabilize the unit. This resistance is not included in the breadboard unit! If the unit is stabilized, the meter may be switched to the 150 mV range to see these fluctuations in expanded form. It may be necessary to slightly re-adjust the SET control, however.

To monitor the earth's g-field average level, reduce the gain until the fluctuations (on the 150 mV range) are in the order of +/- 2% or so of the chosen reference, say 130 mV. This is about the order of the earth's normal gravity field variation at the present time. As an experiment, try bending over the detector to introduce your body mass over the unit. Careful observation may indicate to you that the average response may increase (a reduced g-field for this unit) in the meter scale in the order of another .5 - 1.0 %. This is sometimes difficult to observe, depending upon the amount of cosmic fluctuations and your circuit sensitivity at that time.

After you are quite familiar with these adjustments, try using the 6800  $\mu$ F capacitor (external sensor). The larger sensor device may prove a bit more sensitive. Try changing  $f_0$  and observe any changes with frequency.

## 2. 1/f Noise Response

Re-adjust Ckt. A at the highest  $f_o$  (fully CW) and best sensitivity. Keep the average response near 130 mV. Use either 1 Hz or 10 Hz on the L.P. Filter. You will notice that the fluctuations may occur quite often but the amplitude will be quite small. Slowly reduce  $f_o$  with a (CCW) turning of the control. Note that as the frequency of response is being reduced, the fluctuations are increasing in amplitude. Although the circuit gain is also a function of  $f_o$ , the excursions will increase in amplitude much faster than the circuit gain increases. This behavior is the so-called 1/f noise effect and it is related to the fact that the unit is responding to fewer but more massive supernovae (i.e., increasing amplitudes) as the circuit response frequency is reduced. Again, this effect will require proper adjustments for observance.

### B. Some Chart Recorder Tests

The tests given here were made with D'Arsonal-meter type chart recorders; first, because those are the units I have, and second, the large inertia of these coil movements tends to smooth out the GW signal responses, this eliminating much of the annoying fine structures to be seen. The rapid response time of the potentiometric-type recorders will include too much fine structure and thus the traces are very noisy. The general system used in these tests of Ckt. A is given in Fig. 2. For the so-called 'fast' scans I used an old Esterline-Angus spring-driven Model 424-A unit, while the so-called 2-D responses were obtained with a Rustrak Model 288.

### 1. Fast Scans with the Esterline-Angus recorder

Ckt. A is used here in the gravimeter mode with the L.P. Filter in the 10 Hz position, the SET control about mid-range, and the  $f_o$  control set at mid-range initially. The gravimeter output is coupled through a single double-diode off-set to the Esterline-Angus recorder (running at 3" per minute) as shown in Fig. 2. Using techniques as given in section A (above), adjust the  $f_o$  control (in conjunction with SET) to obtain maximum excursions on the Esterline-Angus unit. Since Ckt. A is operating at low-levels for the 1458 bipolar device, the responses on the recorder will be quite limited (only about +/- .5 inch maximum) and thus will not show much interesting responses. This is because the large meter coil in the Esterline-Angus recorder requires a higher voltage output to be effective. For the experimenter interested in further pursuing these rapid astronomical responses, it is recommended that detector Ckt. #75 as described in the January 1989 edition of the Radio-Electronics

Experimenter's Handbook be used instead. The writer normally uses that circuit in his 'fast' astronomical signal observations. That circuit will easily resolve 'structures' in the Milky Way Galaxy, such as nearby star systems as well as 'black holes,' supernovae, and other interesting structures. It will also 'see' structures very deep in space. Optical and radio astronomers take note! All in real time, too!

### 2. Two-dimensional (2-D) scans with the Rustrak 288

The adjustments as given above in section (1) are also generally used for the 2-D responses except that Ckt. A is coupled to the Rustrak 288 recorder unit running at ½" per hour. Again, adjust  $f_o$  and SET controls for maximum excursions on the Rustrak unit. Thus,  $f_o$  will generally be somewhere in the 600-700 Hz range. In the tests of Ckt. A mode here, there was much deep space structure seen in the scan width of about ½ inch. Again, those truly interested in this type of astronomical observation would have better results using Ckt. #75 or any of the other gravimeters previously published. Ckt. A, while effective in this application, is also limited in output level responses.

## IV. Conclusions

Ckt. A does serve as an introduction to GW signal detection techniques, but as already mentioned, it has some limitations. For those interested in these techniques, a number of articles and notes are available from Rex Research Archives, The International Tesla Society, Radio-Electronics, and Untapped Technology in Review. A list of such references will be prepared in the future.

Good luck and experimenting to all!

## **ANEUTRONIC NUCLEAR REACTIONS**

By Hal Fox and Shang-Xian Jin

Figure 1 is a chart of the nuclear reactions which can occur when an **Original Nucleus** is bombarded by various types of particles. The chart is plotted so that the y-axis represents the increasing number of protons with increasing y and the x-axis represents an increasing number of neutrons with increasing x. If you add the number of neutrons and the number of protons (adding the values of x and y) you obtain the mass number for the element represented by x,y position of the nucleus in that position.

Assume that the original nucleus can be bombarded (or can be injected) with the following particles: neutron ( $n$ ), proton ( $p$ ), deuteron ( $d$ ), alpha particle or  ${}^4\text{He}$  nucleus ( $\hat{a}$ ), tritium nucleus ( $t$ ),  ${}^3\text{He}$  nucleus ( ${}^3\text{He}$ ), and gamma ray ( $\hat{a}$ ). The diagram indicates the



incoming particle ( , ) outgoing particle for each resulting new location in this table of nuclides. Note the (n,n) means a neutron is absorbed (incoming) and a neutron is released (outgoing). In this case there is no change in the position of the original nucleus in the table -- in other words, the original nucleus has no more nor less protons and no more nor less neutrons. If a proton is absorbed by the original nucleus the mass number increases by one proton which is shown as one block up on the diagram. In this block is the label (p,ā). This means that the original nucleus has become a different element (one more proton in the nucleus) and that the nucleus would emit a gamma ray. Of the thirty-two possible reactions, using the designated particles, **there are only seven in which neutrons are not involved as either the absorbed particle or an emitted particle. With protons as the injected particle, there are only two of the reactions that do not involve an emitted neutron as shown in Fig. 1.**

number of neutrons					
		$\alpha, 3n$	$\alpha, 2n$ ${}^3\text{He}, n$	$\alpha, n$	
		$p, n$	$p, \gamma$ $d, n$ ${}^3\text{He}, np$	$\alpha, np$ $t, n$ ${}^3\text{He}, p$	
$p, t$	$p, d$ $p, pn$ $\gamma, n$ $n, 2n$	Original Nucleus $n, n$	$d, p$ $n, \gamma$ $t, np$		$t, p$
$p, \alpha$	$n, t$ $\gamma, np$ $n, nd$	$n, d$ $\gamma, p$ $n, np$	$n, p$ $t, {}^3\text{He}$		
	$n, \alpha$ $n, n, {}^3\text{He}$	$n, {}^3\text{He}$ $n, pd$			
					number of protons

**Fig. 1 Displacements Caused by Nuclear Bombardment Reactions**

These two possible proton-injected nuclear reactions are characterized by one additional proton absorbed and the emission of an alpha particle, or the absorption of a proton and a gamma out. These reactions can be described in a convenient notations:

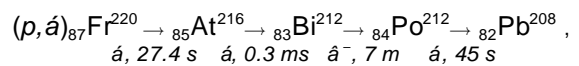
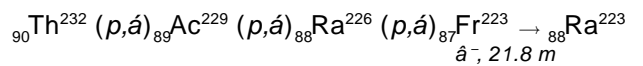
$${}_z\text{A}^a(p, \acute{a})_{z-1}\text{B}^{a-3} \text{ and } {}_z\text{A}^a(p, \bar{a})_{z+1}\text{B}^{a+1}$$

where z and a are the atomic number and atomic weight of the target nucleus A, and B is produced nucleus. The (p,ā) reaction causes the original nucleus to be in a position on the chart of nuclides at one less proton (down one) and two less neutrons

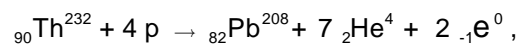
(left two slots on the x-axis). The (p,ā) reaction causes the new nucleus to appear one block up on the diagram. For most of the heavy nuclides both the (p,ā) and (p,ā) reactions are exothermic; for intermediate nuclides the (p,ā) reaction could either be exothermic or endothermic depending on the specific reaction. The (p,ā) reaction usually have lower yield than the (p,ā) reaction.

It is important to note that most of the nuclides that are created by the absorption of a proton are unstable. One of the purposes of a Chart of Nuclides is to provide data on the stability of all nuclides that have even a few microseconds existence. In such a table, the nuclides are often identified by colors so that one can immediately discern if the nuclide is stable. If the nuclide is partly stable, then a good chart provides the half-life of the element and the method of decay into a more stable form. In many cases, the injection of one particle into the massive nucleus results in **fission** of the compound nucleus. With this nuclear fission many combinations of elements are possible.

As an example, we consider the possibility of proton-induced aneutronic transmutation of a heavy radioactive element, such as thorium. If the following nuclear processes could occur through (p,ā) or (p,ā) reactions in some special environment, then the long-lived radioactive thorium could be transmuted to short-lived nuclides, without involving neutrons, and result in stable elements in a short time period. From considering the energy, baryon number and charge conservation, a possible proton induced aneutronic/agamma process might be:

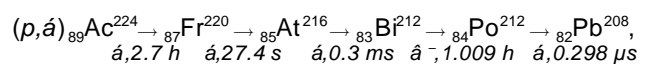
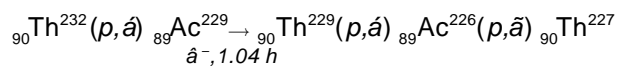


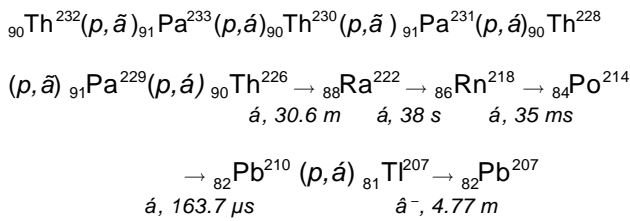
or



where the lower figures represent the mode of decay and the half-life of the element preceding the → ;

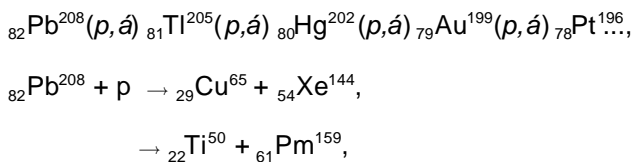
and aneutronic process but with gamma rays might be:





etc., where h=hours, m=minutes, s=seconds, ms=milliseconds and  $\mu$ s=microseconds. These are only three examples of more than a hundred possible chain of transmutations.

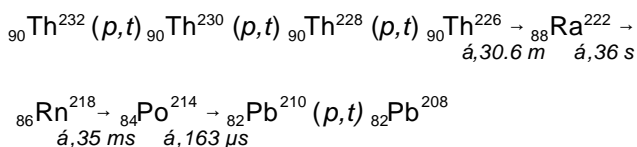
With continued injection of protons, further nuclear transmutation of Pb might also be possible, for example:



etc., where Xe-144 is produced in a gas state and Pm will quickly decay by  $\bar{a}^-$  emissions to stable  ${}_{65}\text{Tb}^{159}$ .

The end result of these nuclear reactions is the production of Helium (He), Lead (Pb) and other various elements including Au, Pt,...,Cu and Ti **without the production of neutrons.**

It must be noted that except the  $(p, \bar{a})$  and  $(p, \bar{a})$  reactions, the proton could also induce  $(p, d)$  and  $(p, t)$  reactions which are endothermic for most of the nuclides. For example, a possible proton induced aneutronic/agamma process might be



In this process the energy, baryon number, charge, spin, parity and isospin are conserved. Actually, for any  $(p, t)$  reaction of nucleus with even-even nuclei (an even number of protons and an even number of neutrons), all the above conservation laws are conserved.

Furthermore, any hydrogen environment always contains small amounts of deuterium (~0.15%), and, therefore, along with proton induced nuclear reactions the deuteron-induced  $(d, \bar{a})$ ,  $(d, \bar{a})$ ,  $(d, p)$  and  $(d, t)$  reactions are also possible. And the injection proton(or deuteron) into massive nuclei might result in fission of the compound nuclei. All possible reactions of this kind would constitute hundreds of

possible chains of transmutations. The probability of each transmutation chain would, in general, not be equal, and most possible chains of transmutations would be determined by experimental results.

The basic conditions in which above transmutation processes could occur is that there exists an environment in which a large amount of hydrogen (and therefore protons) would be available and where there would exist some mechanism of proton acceleration. A high-energy proton accelerator can directly provide these conditions. It is, however, too expensive to build and use. The ability to create low-energy nuclear reactions has opened up a new way to transmute nuclides. Some specially-designed, aqueous electrolytic cell or electrical-discharge device (vacuum or non-vacuum) with special electrodes in a special hydrogen-rich environment can be used. The **plasma-injected nuclear transmutation** might provide a mechanism of proton acceleration in such cells or devices. Countless electron charge-clusters generated from fracto-emission of electrons in or near the surface and intersurface of the brittle electrode and from collapsing bubbles in the near surface of an electrode could ionize hydrogen and pick up and carry minute fraction of protons and be accelerated to a high enough energy by a local electric field to produce nuclear reactions. These charge-clusters are unlimited mini-accelerators provided by nature and can probably be used to transmute nuclear waste.

In summary, there are methods by which nuclear reactions can occur without the production of neutrons. To the persons well-qualified in nuclear physics, this statement is readily acceptable. What is surprising is the fact that in metal hydrides or in some hydrogen-rich environments, nature seems to prefer the  $(p, \bar{a})$  or  $(p, t)$  reactions over the  $(p, n)$  or  $(p, pn)$  reactions. The experimental results, as shown by the Patterson cell and the Cincinnati Group's cell, are that rather complex nuclear reactions can take place in these special reactor cells without the production of significant neutrons. However, the authors are equally sure that by the selection of certain variables, including the target material, that neutrons can be produced. **The important scientific fact supported by experimental results is that nuclear reactions can take place without the production of neutrons.** Furthermore, the combination of both endothermic and exothermic reactions implies that some of these complex nuclear reactions could take place without the production of large excess thermal energy. This fact was one of the findings of some experiments using the plated spheres and the electrochemical cell invented by Dr. James Patterson.

**BENIGN NEGLECT**

Wingate A. Lambertson, Ph.D.  
June 30, 1997

A few of us in the new energy field have been threatened and harassed. Most of us have just been ignored – we have been victims of benign neglect. John Ed Pierce, a Kentucky newspaper columnist, wrote that what the children of today need the most is "benign neglect." I was struck by the analogy between today's children and the United States energy business.

We were visited recently by our youngest granddaughter and her mother. The mother said, "I think we will go to Ireland next year for our vacation." Our granddaughter responded, "I want to go to Hawaii." Her mother came back with, "You have already been to Hawaii!" How well we remember visits by our grandchildren when they said, "I am bored, what are we going to do next, Grandma?" They did not know how to entertain themselves.

We have had the energy industry with us since the discovery of oil and the Edison Electric Company formation. Emphasis on alternative forms of energy began in this country when Eugene Wigner from Princeton and Leo Szilard from Columbia University, visited Albert Einstein while he was on vacation in Long Island during July, 1939 and wrote the famous Einstein letter to President Roosevelt. This resulted in an initial nuclear grant of \$6,000 in late 1940. After the Japanese attack on Pearl Harbor this program took off, leading to development of the atomic bomb, the development of nuclear submarines, and commercial nuclear power plants. Our government's alternative energy effort today is the responsibility of the Department of Energy and is carried out through industrial contractors and a system of National Laboratories.

The crisis of World War II led to the development of a vast energy industry which, after almost 60 years, is still a child of the U.S. Government. It has been pampered and protected just as are our children of today.

Our present world crisis is of an entirely different nature than that of the expansive dreams of Hitler or of the Japanese Empire. World governments are just beginning to learn about the potential threat of global warming. Unfortunately, this time, those of us in the United States are the "bad guys," as 20 percent of pollutants blamed for global warming originate in the United States. If we wish to protect our way of life, we have to do something differently.

I have a personal interest in the global warming threat, since in 1997 tropical storm "Josephine" resulted in Gulf of Mexico waters coming within four inches of our living room floor.

The problem has gained the attention of President Clinton and in a New York speech, he described forecasts of an ocean rise of two feet or more in the next 100 years. He expects to develop a program to meet this problem in time for the Kyoto meeting at the end of this year.

Specifics given by the President are to have the Department of Energy oversee a program to install solar-energy panels in a million homes by 2010 and to prod National Laboratories to develop technologies to end reliance on polluting energy sources.

This is not very comforting to me to learn that those organizations responsible for such waste are going to save our future. Hundreds of billions of dollars have been wasted on fast breeder reactors, high temperature fusion energy generators and the super collider over the past 40 years. They have had solar energy programs for over 20 years and still need another 14 years to electrify one million homes.

Our National Academy of Science declared cold fusion to be fraudulent and has successfully prevented federal support to inventors working in the field. The U.S. Patent Office had refused to grant cold fusion patents until Dr. Patterson had one granted through oversight.

The New Energy field has grown through this benign neglect while the Department of Energy is rapidly becoming irrelevant. National laboratory scientists, those children of the explosion of research in high energy physics and those who teach that new energy research is a fraud, will find it difficult to change and embrace that which they have ridiculed.

Who are we going to select to represent us to carry the letter to President Clinton? The obvious organization to originate the letter is the Institute for New Energy

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**The Law of Conservation of Experts**

For each and every expert, there is an equal and opposite expert.

from Duncan, *Nexus*, Aug/Sep 1997



# LETTERS to the Editor

E-MAIL FROM SHANE MCKELVEY

Dr. Bailey, President of INE,

First, let me offer my compliments on the New Energy website. It's an enlightening pleasure to find so much information of such quality at one location. All I can say is, I hope you and yours can keep up this great work.

Another thank-you is also in order here. I have been interested in alternative energy research, alternative viewpoint political and social criticism and action for a long time. The challenge made throughout the INE website to get off the couch and DO something has now become too difficult to resist.

The PADRAK notion of self-education is imperative. Media, both commercial and publicly funded, seem to have little interest in exploring or promoting ideas and inventions whose basis falls outside the main stem of "accepted public discourse." Any challenge to the scientific or political status quo seems to die out of self-censorship or outright interference from commercial/political interests. One must turn to sources like the INE to find information and direction.

As far as action is concerned, I'm in the process of researching what my best course might be. Not being a physicist, mathematician or trained engineer, I do not feel qualified to critique the work of people who are attempting reasoned reinterpretations of Einsteinian relativity, for example. At the other end of this spectrum of discourse, I'm also at a loss to offer much insight into things like the Methernitha generator. Not sufficiently in tune with The Force, I suspect. I do, however, have computer experience, some writing and research ability of a general journalistic nature and mechanical/electronic design and fabrication skills. Also, I have access to machine shop tools and techniques. Perhaps there is some role for me in prototype fabrication, independent verification of experiments and/or devices, and perhaps "fair witness" reporting of any results. Like you, my interest is in workable solutions, not speculation. To paraphrase the line from the movie Jerry McGuire, "Show me the hardware!" [That's one of the prime objectives of INE. -Ed.]

Presently, I earn my living by doing quality assurance testing of personal computer software. This is momentarily convenient, but not in line with my long term goals which involve promoting decentralized

political and economic power through the development and promotion of alternative energy and "right livelihood". If you have the time and inclination, perhaps you can respond with suggestions as to possible directions I might take.

There are a couple of comments and suggestions with which I'd like to conclude:

A valuable addition to the INE website would be information on some of the more successful but less esoteric alternative energy technologies that are now being developed or commercialized. There's a lot of good, solid work being done that is of value. I'm thinking of fuel cell technology such as that being sold by Ballard of Vancouver, BC (whose customers include Daimler Benz), hydrogen in general with news on high density storage (the work of Baker & Rodriguez of Northeastern University who claim development of a material making possible on-board vehicle storage capable of delivering 5000 mile range as reported in the Hydrogen & Fuel Cell Letter), and solar hydrolysis, specifically the "Holy Grail" breakthrough work being done by Kogan, et al. at the Weizmann Institute in Rehovot, Israel. [Can you summarize these developments for *NEN*? - Ed.]

Other interesting things are happening with technology that's been around for decades - photovoltaics. Enron (the natural gas/electricity giant) is building a PV array in Nevada for the purpose of supplying electricity to the grid at rates comparable to existing alternatives. There goes the Old Party Line about how PV will "always be too expensive to supply more than a tiny fraction of our total electricity." I take it as a hopeful sign that a hard-nosed, profit maker like Enron is punching holes in the wall of received wisdom. At Western Washington University in Bellingham, the Advanced Vehicle Research program at the engineering school there is working on thermo-photovoltaic gensets for automotive application. These use high efficiency combustion of methane (possibly hydrogen?) to heat a ceramic photon emitter that excites the PV array inside the power unit. I could go on and on. (Already have)

The danger I see in what INE is attempting is being drawn into the sucking muds of Internet conspiracy delusions. You seem to have the altogether rational view that there's lots of hanky panky in the smoke and shadows surrounding alt.energy/free energy, but that it's not all being directed by an unseen, all-powerful hand. Active suppression, lack of funding, Patent Office pranks, "national security" B.S., scientific skepticism and paradigm limitations all play a role. INE is working mostly in the realm of the "almost, but not quite" real. **Aethereal wind and anti-gravity are**

**concepts that spook the herd, the media, the government. Not to discuss these things is no alternative, but if they are to be evaluated seriously it's best to do so on dry land and not on the thin ice of anecdotes about CIA sponsored death threats, mysterious fires, bombs going off, planes crashing, official harassment, etc.** [Excellent advice, which INE tries diligently to observe. –Ed.]

Now, I don't doubt for a moment that this sort of thing goes on. We live in a country seemingly run by murderous thieves who enjoy the use of limitless public resources, but pointing this out is not going to make New Energy goals more achievable. That's why I suggest offering data and links to New Energy stories (in addition to the tribulations endured by numerous researchers) that show signs of success in spite of possible threats to the status quo. Success in related areas suggests the possibility of the necessary revolution in the energy economy. A major mind trap and excuse for inaction is when people say things like "we could have clean, safe, locally produced power today, but the government won't let it happen." To @#\$% with the government [supposed interference].

No corrupt government [bureaucrats] or thug elite can permanently stop people from buying a better car, or a community fuel cell. Even if it happens to run on a clean, renewable, freely available chemical fuel. Because ten years hence, that's what I'm going to be driving, that's what I'm going to be using to light my home, even if I have to build the %\*#@! things myself.

Thanks for your precious time.  
Shane McKelvey

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## LETTER FROM THE NETHERLANDS

As a response to the questions in your Editorial, "What are the Characteristics of the Aether?" by Hal Fox (*NEN*, vol 5, no 1, May 1997, p 14). [Responses indicated by bullets.]

If there is an aether, what are the characteristics of that aether?

- My view is this: the aether is built out of particles with no mass and no dimension, the particles are unlimited small. All particles attract each other. All matter is built of aether. Atoms and all other matter are balanced systems of interaction of taking and dumping aether. Gravity is the flow of aether into the matter. With this theory you can explain everything! Such as: Black holes, Gravitation. So now build a Super Super computer to simulate this. Then we can see the inside of electrons, protons, and other particles.

1. The aether is a fluid-like medium in which all matter resides.

- All matter is built of aether.

3. The earth spins in the aether but (similar to the fundamental notion of fluid mechanics) there is little relative motion between the earth's surface and the aether. (See Michelson-Morley's experiment for measuring the speed of light).

- No, by gravitation the aether flow goes inside earth (all matter attracts aether – this is gravitation).

5. "Waves," such as light waves, travel at about  $3 \times 10^{10}$  centimeters per second. However, light of different frequencies travels at different speeds. The speed of light is measured near massive objects. The speed of light in interstellar space may be different.

- The speed of light is all the same but the density of the aether is not. If the aether is denser, the light wave must travel longer (speed of light is slower). If the aether is less dense, the light waves go faster because the waves don't have to penetrate so much aether (speed of light is faster).

6. Light photons can interact with electrons and increase or decrease the mass of the electrons. (See Quantum Mass Theory Compatible with Quantum Field Theory, by Petar K. Anastasovski & Trevor M. Benson, c1995, Nova Science Publishers, Inc.).

- Yes, photons can increase mass of an electron because if they interact they can increase the gravity of the electron, the electron grows until the mechanism of dumping aether in the form of aether or photons or other particles is back online (or there is a balance). The mass of the electron is back to normal then.

8. The aether is increased by all type of radiated electromagnetic phenomena. The aether is decreased by small but finite interactions with matter (possibly more intense interactions are found in massive bodies such as planets and suns).

- Aether is not increased by radiated electromagnetic phenomena, because in magnetic fields aether is taken and given back (there is only a flow).

9. The aether flow through ferro-magnetic materials is the fundamental cause of magnetism.

- Aether flow is magnetism (with different frequencies).

Bas Groenendijk (19), from the Netherlands  
E-mail me: 114390jg@student.eur.nl

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**LETTER FROM NIK ZARICK**

Greetings from Connecticut. I hope you all are well and enjoying the summer.

I received a letter from you pertaining to my much enjoyed complimentary subscription to *NEN*. I have been receiving *NEN* and I do find it helpful in my research. I must admit that a lot of it is way over my head. Yet I seem to always find something that I can connect to my work.

I was very pleased when *NEN* published my letter and my heart smiled at your response.

I do wish that *NEN* focused more on alternative, low-tech energy production, such as wind, small scale hydro., active and passive solar, biomass and co-generation systems. I am trying to amalgamate user friendly / off grid energy systems within my architectonic studies.

I do find the majority of the articles interesting and brilliantly written and I have a deep respect for the authors. I hope that you will continue my comp. sub. for which I will be very grateful. Good luck in all that you do. The world needs *NEN* and like publications. Thank you for enlightening me.

With Respect,  
Nik Zarick  
CT Dept. Corrections

Dear Nik,

Thank you for your letter. We enjoy hearing from our readers. We will continue your subscription for another year.

## ***Meetings***

Russian Academy of Science, Russian Physical Society, Nuclear Society of Russia, Russian Chemical Society, Lomonosov Moscow State University, Peoples' Friendship University of Russia, and the Moscow State Technical University present:

**5TH RUSSIAN CONFERENCE ON  
COLD FUSION AND  
NUCLEAR TRANSMUTATION (RCCFNT-5)  
September 28 to October 5, 1997**

To be held at Hotel Olimpiyskiy in Dagomys  
near Sochi on the Black Sea

Program of the Conference includes: Experimental Researches of Cold Fusion and Nuclear Transmutation; Cold Fusion and Nuclear Transmutation theoretical models; Cold Fusion applied technologies and devices.

The registration fee of \$1200 covers: Registration fee, Conference proceedings, transportation to and from Airport in Moscow, Hotel stay in Moscow (2 days), transportation by train to and from Sochi, Hotel at Sochi, daily meals (3) from Sept 25 to Oct 8. If you want to take part in the Conference, please inform the Chairman Yu. Bazhutov, by E-mail or fax immediately for arrangement of your transportation from Moscow to Sochi, and hotel accommodations.

We will meet you at the Moscow Airport from Sept 25 to noon Sept 26, if you will give us your flight information. Projected date of return flight from Moscow is from afternoon of Oct 7 to Oct 8.

Contact: Yu. Bazhutov, Chairman of RCCFNT-5  
P.O. Box 169, Erzion Center  
105077 Moscow, Russia  
Phone, (011) 95-464-78-81, (011) 95-939-18-28  
Fax, (011) 95-939-29-91, (011) 95-954-02-28  
E-mail: sukhanov@srdlan.npi.msu.su

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Hotel information: 1-800-222-TREE (mention IFNS)

## ICCF-7

International Cold Fusion Forum  
Vancouver, B.C., Canada  
April 19-24, 1998

With the maturation of the field, ICCF-7 seeks to attract a more diverse audience including additional scientists, research institutes, students, national funding agencies, commercial interests, journalists, and spouses. It is the objective of ICCF-7 to provide a productive international forum for communication and education.

### Calendar:

September 1997: Official call for full, one-page abstracts. Final peer review process begins.

December 1997: Final notification to all presenters regarding the format of their presentation.

January 1998: Deadline for final abstracts to be published in ICCF-7 Program Manual and Website.

April 1998: Conference. All presenters must hand in their final papers during the conference for timely inclusion in the publication ICCF-7 Proceedings.

A different topic is planned for each day at ICCF-7. An invited presentation with summary review or global implications for the entire field will begin each day's topic, followed by five oral presentations on the topic. Afternoons will be entirely devoted to enhanced poster sessions, which include a 3-5 minute oral preview and summary. A "Top Ten" poster presenters will be selected by the attendees, and each will conduct an expanded 15 minute presentation to the full audience on Thursday afternoon. Three evening workshops will also be held.

Topics include: Heat & Related Products, Nuclear Processes & Products, Materials & Innovative Approaches, and Theory & Nuclear Physics.

For more information or to get on mailing list, contact:

ICCF-7 c/o ENECO  
391-B Chipeta Way, Salt Lake City, UT 84108 USA  
Phone (801) 583-2000 Fax (801) 583-6245  
jaeger@ENECO-USA.com

## 18th International Symposium on Discharges & Electrical Insulation in Vacuum

August 17-21, 1998

Eindhoven, The Netherlands

Hosted by the Eindhoven University of Technology

**Scientific Program**, Papers will be presented on all aspects of: Fundamentals of Discharges and Breakdown in Vacuum; Vacuum Discharge Devices and Applications; and Vacuum Insulation Technology and Applications.

**Mini-Courses** held parallel with conference: Diagnostics for Vacuum Devices, and Production Technology for Vacuum Insulated Devices

A **technical exhibition** will be held featuring components and systems in the area of vacuum discharge devices and vacuum insulated devices (e.g. vacuum switchgear, vacuum deposition and coating, X-ray and microwave tubes and other beam-devices, high-power devices, and equipment for analysis, monitoring and test purposes).

Hotel accommodation in downtown Eindhoven, a short distance from the University Conference Center, is available through the EUT Conference office at reduced rates.

### Information for Authors

Authors should submit a 250 word abstract by November 1, 1997. Authors of accepted abstracts will be notified in Dec. 1997. Deadline for camera-ready manuscripts is April 1, 1998. Accepted papers will be published in conference proceedings, available at the registration. A limited number of accepted papers will be selected for publication, in a modified and extended version, in Special Issues of *IEEE Transactions on Plasma Science* and *IEEE Transactions on Dielectrics and Electrical Insulation*. The working language of the symposium is English. All printed matter will appear in English.

**Correspondence** should be sent to:

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Website: <http://www.ele.tue.nl/evt/isdeiv/>

## Commercial Column

The following companies (listed alphabetically) are commercializing cold fusion or other enhanced energy devices: [Listings with your additional copy, or boxed, for small annual service fee.]

### COMPANY: PRODUCT

**American Pure Fusion Engineering and Supply:** Warren Cooley, 1-800-789-7109 or 503-585-6746. Email to: Coolwar@aol.com

**CAI, Inc.,** CAI has acquired rights to develop and produce a new-type of thermal power based on the controlled production of clean nuclear reactions from micro-miniature tokamaks (provided by nature). Contact through FIC, Voice 801-583-6232, Fax 801-583-2963.

**ENECO:** is in the business of commercializing the exciting new field of low energy induced nuclear reactions in solids via patent licensing, joint-ventures, and co-operative research. ENECO, University of Utah Research Park, 391-B Chipeta Way, Salt Lake City, Utah 84108 USA. Contact Fred Jaeger, Voice 801-583-2000, Fax 801-583-6245. Email: jaeger@ENECO-USA.com

**Clustron Sciences Corp.:** Contact: Ron Brightsen, 703-476-8731.

**E-Quest Sciences:** Contact Russ George, FAX 415-851-8489.

**Fusion Information Center (FIC):** Research and development of new energy systems. The world's most complete resource depository for cold fusion research information, as well as other new energy research including zero-point energy; space energy research; electronic, electromagnetic, and mechanical over unity devices and transmutation. We are the publishers for *New Energy News*, and the *Journal of New Energy*. Voice 801-583-6232, Fax 801-583-2963. Contact Hal Fox.  
**Now Marketing LENT-1 Transmutation Kit.**

**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.:** Rome, Georgia. Contact James Griggs, Voice 706-234-4111 Fax 706-234-0702.

**JET Energy Technology, Inc.:** Weston, MA. Contact Dr. Mitchell Swartz, Voice 617-237-3625. Fax 617-237-3625.

**Labofex, Experimental and Applied Plasma Physics:** Ontario, Canada. Contact Dr. Paulo N. Correa. Tel 905-660-1040  
Fax 905-738-8427

**Magnetic Power Inc.:** Sebastopol, CA. Contact Mark Goldes, voice 707-829-9391, Fax 707-829-1002.

**Nova Resources Group, Inc.:** Denver, CO. Call Chip Ransford, Phone 303-433-5582.

**UV Enhanced Ultrasound:** Hong Kong.  
FAX 852-2338-3057.

**"YUSMAR"- Scientific-Commercial Company:** President: Dr. Yuri S. Potapov, 277012 Kishinev, Moldova. Phone and Fax 011-3732-233318.

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

### INFORMATION SOURCES

Academy for New Energy (ANE) 216 Commerce Drive, Ste. 4, Fort Collins, CO 80524. Tel. 970-482-3731  
*ANE Newsletter*, quarterly publication of ANE, edited by Robert Emmerich.

*Advanced Energy Network Newsletter*, quarterly. Advanced Energy Network, P.O. Box 691, Rondebosch 7700 Capetown, Rep. South Africa.

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

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

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

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

*Electrifying Times*, 3/year magazine. 63600 Deschutes Market Rd, Bend, OR 97701  
541-388-1908, Fax 541-388-2750,  
E-mail <etimes@teleport.com>  
[www.teleport.com/~etimes/](http://www.teleport.com/~etimes/)

**Fusion Facts** has become a section in the *Journal of New Energy*.

*Fusion Technology*, Journal of the American Nuclear Society, edited by Dr. George Miley, 555 N. Kensington Ave., La Grange Park, IL 60525.

*Infinite Energy*, bi-monthly magazine. P.O. Box 2816, Concord, NH 03302-2816. Voice: 603-228-4516. Fax: 603-224-5975 E-mail 76570.2270@compuserve.com

**Institute for New Energy (INE)**, organization to promote and help find funding for new energy research.

Visit our **Home Page**: [www.padrak.com/ine/](http://www.padrak.com/ine/) which contains many important scientific papers and current reports on all areas of research.

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or [ine@padrak.com](mailto:ine@padrak.com)

Salt Lake City, Utah. Voice 801-583-6232,  
Fax 801-583-2963.

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

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

KeelyNet BBS - Jerry Decker, 214-324-3501  
Internet: [www.keelynet.com](http://www.keelynet.com)  
E-mail: [jdecker@keelynet.com](mailto:jdecker@keelynet.com)

*Planetary Association for Clean Energy Newsletter*, quarterly, edited by Dr. Andrew Michrowski. 100 Bronson Ave, # 1001, Ottawa, Ontario K1R 6G8, Canada.  
Web page: <http://energie.keng.de/~pace>

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

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

Press Release from Laplacian Press

### **A.D. Moore's Electrostatics Classic Is Back in Print**

A.D. Moore once again shares his enthusiasm for electrostatic experimentation in the authoritative and enjoyable book, Electrostatics: Exploring, Controlling, and Using Static Electricity, 2nd ed. First published in 1968 as part of MIT's Science Study Series, the second edition includes the never before published Dirod Manual, a handbook for building your own electrostatic generator.

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For details, contact Electrostatic Applications, 16525 Jackson Oaks Dr., Morgan Hill, CA 95037. Tel: (408) 779-7774, Fax: (408) 779-3638, e-mail: [electro@electrostatic.com](mailto:electro@electrostatic.com).

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