

By Eugene F. Mallove, Sc.D.

Why “Infinite Energy”?

Every new magazine needs to explain itself on “Day One,” and we admit that this one needs some explaining! Infinite Energy? Sounds preposterous, doesn’t it? Perhaps, until you examine what has been happening in the so-called “cold fusion” field since 1989—and in the “New Energy Technology” field, which actually began many years ago when scientists, tinkers, and inventors were puzzled by unexplained anomalies of excess power production in heat-producing as well as in electricity-producing machines.

Are these phenomena related—cold fusion and other forms of excess power? More to the point, are they real at all? Read our magazine and draw your own conclusions. That’s all we ask of you. Be true scientists and study the data without jumping to the rash conclusion that preconceived theories rule out the mountain of “cold fusion” and “new energy technology” data that will confront you. We would be surprised if you did not come to agree with us that the excess heat and excess power phenomena are both real and revolutionary. Of course, not all experiments in this dynamic field may be said to be conclusive, but the overall range and multiplicity of findings leaves no doubt, in our minds at least, that new science and a rapidly emerging new technology are upon us.

It’s 1995. We say, welcome to the New Energy Age! Chemists, engineers, and physicists: you have a big

wake-up call, 100 years after Roentgen’s discovery of x-rays (November 1895) revolutionized classical physics.

It is difficult to imagine a more profound reversal of scientific fortunes than what has been emerging in the “cold fusion” field. One of the most disputed anomalies in the history of science is inexorably heading toward acceptance by the scientific community.

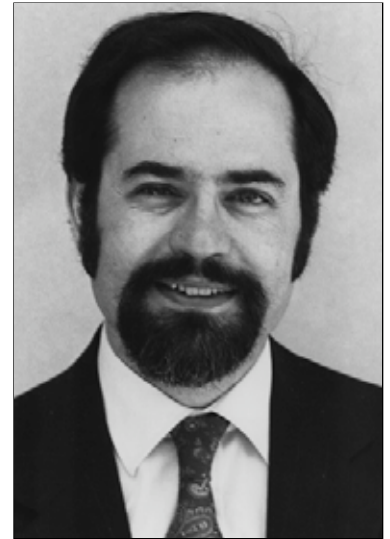
In May 1991, when I published my account of the cold fusion quest to that point, *Fire from Ice: Searching for the Truth Behind the Cold Fusion Furor* (John Wiley & Sons), I suggested that the evidence for “cold fusion” phenomena was overwhelmingly compelling. I acknowledged then that there was a remote chance that it could all be wrong, and I was not certain that technological applications would emerge quickly. But each year since 1991, the evidence has grown more convincing. Now I believe that the case for a spectacular new class of phenomena is 100-percent proved, though I am not sure which of the dozen or so theories best explains the expanding category of anomalous nuclear and nuclear energy-magnitude phenomena. That there will be technological applications is now certain, whether or not the phenomenon is completely understood by that time.

It has been over five years since the March 23, 1989 announcement by Drs. Fleischmann and Pons at the University of Utah. Now it is abundantly clear that their widely denied discovery was

but the “tip of an iceberg,” in which the boundary between chemistry and nuclear physics would be blurred forever. “Cold fusion” may or may not be literally the “fusion” of hydrogen isotopes at room temperature, but whatever the detailed microphysical explanation turns out to be, it will, in part, involve nuclear reactions. It will also have to incorporate the release of macroscopic energy at prodigious levels that are consistent with nearly radiationless nuclear reactions.

You may think that alchemy has risen from the grave. Indeed, in some sense it has. The transmutation of heavy elements in presumptively “chemical” systems has also been observed in a variety of cold fusion experiments. In fact, one researcher at a well-known university in the U.S., who has been highly skeptical of cold fusion, nonetheless performed a Fleischmann-Pons-type experiment and serendipitously discovered unambiguous gamma ray evidence of no less than seven radioactive isotopes that were formed in his palladium cathodes—isotopes of rhodium, silver, and ruthenium. (In 1993 and 1994 this researcher chose not to publish his results, so as not to be ridiculed by his physicist colleagues, but we are confident that he will publish eventually.) The implications for other areas of science: astrophysics, chemistry, geology, and possibly even biology—may very well be profound.

The technological and social implications of “cold fusion” are as astonishing as



the scientific ones. It means nothing less than the end of the fossil-fuel age, the demise of fission nuclear power, and the beginning of a water-fueled—a hydrogen isotope-fueled—civilization. Energy will be cheap and environmentally benign. The fuel reserves are effectively infinite and available to all nations. So please do not begrudge us that “logically impossible” title, INFINITE ENERGY. What if the claimed over-unity “weird machines”—magnetic motors, Hydrosonic Pumps, underwater plasma-arc discharges (shock-induced excess power), and the like are also really producing more power out than in? Will anomalous nuclear reactions be found to explain them? Or will the energy be coming from the tapping of Zero Point Energy (ZPE)—the quantum fluctuations in space-time itself? We’ll leave those issues to the theorists, whom we welcome to our pages as well.

Prototype cold fusion systems that can heat homes and produce electricity are expected to emerge within a year. The pre-prototypes of these devices are actually here already. With the advent of these robust devices, the scientific and technological rev-

olution will accelerate dramatically. Skeptics who felt comfortable attacking alleged "subtle mistakes" in cold fusion experiments will be hard-pressed to deny these practical devices. Money talks. When the largest industrial corporations in the world rush belatedly into cold fusion R&D—as some already have done, particularly in Japan, but increasingly in the United States—the controversy will be over.

To the uninitiated, these conclusions admittedly may seem rash. However, the evidence for the anomaly of excess energy production at levels that cannot be explained by chemical reactions has not gone away. In fact, it has appeared in an increasing variety of different chemical and physical systems. Nor have the numerous by-products of nuclear reactions occurring near room temperature gone away: heretofore, these were thought to be totally impossible. In fact, with each passing month these lines of evidence get stronger as they are revealed with a multiplicity of experimental techniques. These impressive results are increasingly appearing in peer-reviewed journals, such as *Physics Letters A*, the *Journal of Electroanalytical Chemistry*, the *Japanese Journal of Applied Physics*, and *Fusion Technology*, to cite but a few examples. Unfortunately, *Nature* and *Science* still ignore cold fusion, but soon they too will see the light. Perhaps it is fortuitous that the present editorial leadership of both *Science* and *Nature* magazines is now in transition. The new editors of those magazines will be well-advised not to employ the unrepentant, knee-jerk negativism toward cold fusion practiced by Drs. John Maddox at *Nature* and Daniel Koshland at *Science*.

There have been recent media breakthroughs. *Popular Science* ran a positive cover story on cold fusion in August 1993. The May/June 1994 issue of *MIT Technology Review* featured a cold fusion cover story by cold fusion researcher Dr. Edmund Storms, who recently retired from Los Alamos National Laboratory. The British Broadcasting Corporation and the Canadian Broadcasting Corporation co-produced a highly positive hour-long television documentary, "Too Close to the Sun," aired in the spring of 1994. Professor Keith Johnson of MIT, a cold

fusion theorist, has even written the techno-thriller script for a forthcoming Hollywood movie with a cold fusion theme—*Excess Heat*.

"Cold Fusion" Magazine, the first three issues of which I edited, was launched in 1994. Then it became a newsletter with very uncertain direction. Unfortunately, this originally well-received pioneering journal was published in an unsatisfactory environment, and all the editors found it necessary to continue their pursuit of cold fusion elsewhere. Now they have a new home, *INFINITE ENERGY: Cold Fusion and New Energy Technology*. We are proud of our logo, the infinite surface Mobius strip, which in profile happens to look like the symbol for infinity.

If you are new to the field, please avail yourself of our resources. First, you should obviously become subscribers to our presently bi-monthly publication. Next, you should consider purchasing some of the reference material offered in this publication, particularly the set of

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four video tapes of MIT Cold Fusion Day 1995— eight (8) hours of provocative material. Much food for thought, we promise you!

For those who want a quick update of what has gone before in the cold fusion field, you should consider acquiring (for only \$5.00) our Cold Fusion/New Energy Technology Resource Guide, which was the precursor to this magazine. The editors are currently working on a much more extensive Resource Guide, but that won't be published 'till much later in 1995.

Last, but definitely not least, we welcome aboard Hal Fox of the Fusion Information Center in Salt Lake City as our Associate Editor. Since 1989, Hal has been a true pioneer in cold fusion and new energy technology with his highly influential newsletters, Fusion Facts and, later, New Energy News. We urge you to subscribe to these also, even as our two organizations increasingly share information and editorial material.

Eugene F. Mallove, Sc.D.
Editor-in-Chief.

Frontier Perspectives

The history of science has shown repeatedly that novel scientific discoveries now believed to be true were typically disregarded in their time. Unfortunately, the present is no exception; frontier scientists who dare to work at the edges of science face extraordinary obstacles. The Center for Frontier Sciences was established in 1987 to coordinate globally information exchange, networking, and education on frontier issues of science, medicine, and technology. The Center helps engender greater openness to novel scientific claims in several areas, including bioelectromagnetics, the mind-matter interrelationship, complementary medicine, and new energy technology.

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Letters to the Editor

I just received your new publication. To steal a phrase, "Jack is Back!"

Thanks for your perseverance. It's great to rediscover how alive and well the "cold fusion" community still is. This is real adventure, real science. Maybe the excitement and controversy surrounding this field is, in some ways similar to the wonderfully stimulating atmosphere in physics during the 20's and 30's, as the giants of that age began to unravel the mysteries of atomic structure ... and atomic power.

I'll be pleased to see my essay in print. While it may not soften the stone-heads who continue to insist that theory supersedes experimental evidence, it might motivate other, more open-minded folks to jump into the fray.

At the risk of being much too politically incorrect, I believe there is nothing wrong with our modern energy-intensive American life-style that unlimited, non-polluting energy can't fix. Then again, didn't Gandhi warn his countrymen of the spiritual dangers of intemperate materialism? But even those who would lead a more simple life will benefit from new hydrogen energy and its ability to provide energy economically on a decentralized basis. The frontier spirit may live again ... yet with many of essential blessings of technology, such as refrigeration, heating, and lighting.

Geoff Rohde
New Venture Marketing
Davis, CA

Yesterday I received the first issue of your periodical, *CF/NET*. Well, cold fusion seems to be a very optimistic chance for mankind... Let's hope, the big oil companies and other multinationals won't buy it away, or worse... It is time for a big and rapid change in our society, don't you agree? Time to make that society we all know of in our dreams, time to develop a clean society... But it will cost a lot of jobs... I am just a very interested layman, wishing a better, cleaner future for mankind and I think this project is a very hopeful development.

Is there in Europe, or especially here in Holland, a research group or group of interested persons with special attention for Cold Fusion? If there is, is it possible for you to have them contact me?

Johan P.M. Roland,
Purmerend, The Netherlands

I presented an invited paper, "Cold Fusion: Current Status and Future Prospects," at the 53rd Annual Meeting of the Oregon Academy of Science, held at Reed College in Portland on 2-25-95. At the end of my talk I distributed copies of your fax. Two of my graduate students talked about their cold fusion research at the same meeting. The questions from the audience [about 20] indicated curiosity. There was no open hostility.

Enclosed is a paper [*Fusion Technology* 1993] which describes the system which we study. We use a thin, cold rolled Pd cathode, a parallel Pt anode, an electrolyte containing D₂O and H₂SO₄ and current densities in the range 0.5 to 2 A per sq cm. Reactions are fast and reproducible. This paper gives results for a 12 min. experiment, including surface pits which are particularly well characterized by means of an atomic force microscope. We believe that localized melting and vaporization of Pd occurs, since Pd is found in the electrolyte after the experiment. If true, there is no explanation based on any known chemical reaction, because the heat required is about 100 times more than a chemical reaction could deliver.

Also enclosed are three additional publications. These show evidence for excess heat which could be explained by localized concentrations of unexpected elements. Our system behaves as though low energy neutrons are produced. Although we have tried, we have never detected radiation outside our cells. Our results also indicate that substitution of an electrolyte containing H₂O and H₂SO₄ gives the same type of results but to a lesser degree.

Our work is continuing. Five highly motivated graduate students are currently involved in this research.

Thank you for your interest, and best regards.

John Dash, Professor
College of Liberal Arts and Sciences,
Department of Physics
Portland State University
Portland, Oregon

Dear Dr. Mallove:

Your interesting and informative letter to the editor of *Physics Today* (March, 1994) suggests to me that you may be interested in the enclosed copy of my manuscript, "D₂-charged Pd electrodes' anomalous energy productions: induced beta decays?"

Data from sonoluminescence experiments and from Pd/D₂O electrolytic cells