

# Fusion Facts by Hal Fox:

## A Vital Resource for Documenting Early Progress in the LENR Field

Thomas Grimshaw and Ashley McElroy

Harold “Hal” Fox made many contributions to the cold fusion field starting soon after the March 23, 1989 announcement by Fleischmann and Pons. He created the Fusion Information Center (FIC) in Salt Lake City and worked closely with many of the field’s most prominent researchers for more than 20 years before his death in 2012.<sup>1</sup>

Perhaps Fox’s most significant contribution to the field is his publishing legacy, which includes *Fusion Facts* (highlighted in this report), the *Journal of New Energy*, *New Energy News*, writing credits in other publications and the book *Cold Fusion Impact in the Enhanced Energy Age*. Because of its timing (how soon after the announcement it began publishing and also its monthly release) and thoroughness, the *Fusion Facts* newsletter is one of the most significant sources of information on the people and activities in the cold fusion field during its earliest stages.

### Fusion Facts Overview

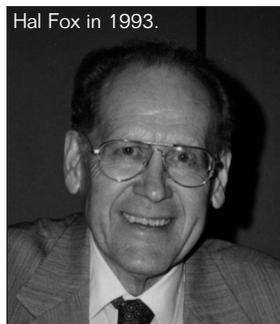
The newsletter *Fusion Facts* began in July 1989, just four months after the March announcement, and continued for over seven years. Fox published *Fusion Facts* under the umbrella of FIC. The newsletters comprise 90 monthly issues in eight volumes and total more than 2,300 pages. Each issue is organized into topics with titles. The final *Fusion Facts* in December 1996 included an announcement that the newsletter was being replaced by the *Journal of New Energy*. Fox was also concurrently publishing *New Energy News*, a monthly newsletter for members of his non-profit Institute for New Energy.

Fox had three staff positions for *Fusion Facts*: Editor-in-Chief (which he held), Circulation and a third position with different titles at different times (such as Associate Editor). The newsletter also had a number of “Technical Correspondents” who provided news and scientific articles. Many states and countries are represented. A total of 21 contributors served as Correspondents during the life of the newsletter. Three of them—Robert Bass, Dennis Cravens and Samuel Faile—held the position for all of the nearly eight years *Fusion Facts* was published. Avarad Fairbanks and Takaaki Matsumoto started in the second year and continued to the end.

After the first four or so newsletters, Fox adopted a pattern



The *Fusion Facts* banner.



Hal Fox in 1993.

that he followed for the remaining issues. It consists of three categories: 1) two to five topics that he apparently thought were of most importance or of greatest interest; 2) cold

fusion news items in the U.S. and Abroad; and 3) regular topics that appeared in most issues, such as editorials and letters from readers. Several additional topical categories are also present, including scientific contributions by Fox as well as by readers of the newsletter, impacts of cold fusion on various sectors of society, and designation of Fusion Scientists of the Year.

Copies of *Fusion Facts* are available in PDF format both online and on CDs.<sup>2</sup> A project is underway to convert the unsearchable PDFs to

searchable documents, describe the newsletter contents in detail by adding a table of contents and create an index for better visibility into what was being reported. (See the section “Fusion Facts Documentation Status” for more information.)

### Headline Topics

*Fusion Facts* issues usually began with headline topics. As noted, they included the subjects Fox believed were particularly relevant. Examples from Volume 1, from July 1989 to June 1990, are:

- Department of Energy Fusion Committee Fails to Recommend Additional Funds
- Laboratories Supporting Solid-State Fusion
- Scoreboard on F-P Effect Replication
- New Director for National Cold Fusion Institute
- Dr. Will Plans Fusion Research
- Fusion Facts Year in Review
- Cold Fusion Successes, Achievements, and Primary Sources
- Summary of the First Annual Cold Fusion Conference

Subsequent volumes presented similar topics of interest to readers of the newsletter.

### Cold Fusion News

A central feature of *Fusion Facts* was the reporting of numerous news items in the cold fusion field. The reporting was presented as a section “News from the U.S.” and another for “News from Abroad,” with many subtopics for both. The

U.S. subtopics generally identified the state, and the news for the Abroad subtopics was presented by country. For both the U.S. and Abroad categories, the location was followed by a few words of explanation, such as experiment, method, signature, theory or review. Over 2,300 items were presented in the 90 issues of the newsletter, including about 940 U.S. and 1,380 Abroad items. It is an interesting look at some of the early work in the field.

### Scientific Contributions

Hal Fox made substantial scientific and technical contributions to cold fusion. Early examples from the first six *Fusion Facts* issues are:

- "Creating a Working Fusion Cell"
- "Calculating Energy from Deuterium Fusion"
- "Palladium Cathode Charging Time"
- "Solid-State Fusion - Solid-State Semiconductors"
- "What Fusion Theory Must Explain" (with Samuel Faile)

Furthermore, *Fusion Facts* routinely included papers submitted by Correspondents and other newsletter readers. Early examples from Volume 1 are:

- Dennis Cravens, "Other Routes to Fusion"
- Samuel Faile, "Clean Up of Radioactive Materials by Cold Fusion?"
- Richard Forman, "Fusion - An Historical Perspective"
- Andrew Huber, "Induced Current in Pd Cathode"
- V.C. Noninski, "Observation of Excess Energy is the Essence of Fleischmann-Pons Effect"

### Fusion Scientists of the Year

In each volume of *Fusion Facts* Fox recognized "Scientists of the Year" in the January issue. Overall, 24 scientists were recognized. Fleischmann and Pons received the first designation, for 1989, in Volume 1 (published in January 1990).

Vol	Year	Designees
1	1989	M. Fleischmann, S. Pons
2	1990	B. Liebert, B. Liaw
3	1991	R. Bush, R. Eagleton, R. Mills
4	1992	Y. Kucherov, A. Karabut, I. Savvatimova
5	1993	J. Bockris, D. Cravens, D. Letts, A. Samgin, A. Baraboshkin, T. Mizuno, M. Enyo, T. Akimoto, K. Azami
6	1994	M. McKubre, R. Bass
7	1995	J. Patterson, J. Drexler

### Cold Fusion Impacts on Society

Fox expressed a particular interest in the impacts of cold fusion on various sectors of society, especially in the early issues of *Fusion Facts*. Volume 1 contains articles on cold fusion impacts on education, energy industries, the automotive industry, the environment, agriculture, the financial community and governments. Impacts on energy policy and the commercialization of cold fusion are described in Volumes 2 and 3.

Fox's book *Cold Fusion Impact in the Enhanced Energy Age* appeared in 1992. The chapter titles correspond closely to the *Fusion Facts* topics on impacts described above. The book features a pocket in the back cover containing a 3½-inch floppy

disk entitled "Bibliography of Cold Fusion." Updates of the disk were provided quarterly until 1996. An early version of the book has a disk that was able to be accessed. It contains entries from July 1989 to December 1992. Approximately 1,470 references were found. Nearly all of the references have a notation of the month and year of the *Fusion Facts* newsletter where the reference occurs. A later CD issued by FIC<sup>2</sup> has a bibliography of all three of its publications.

### Editorials, Letters, Conferences, Advertisements, Humor

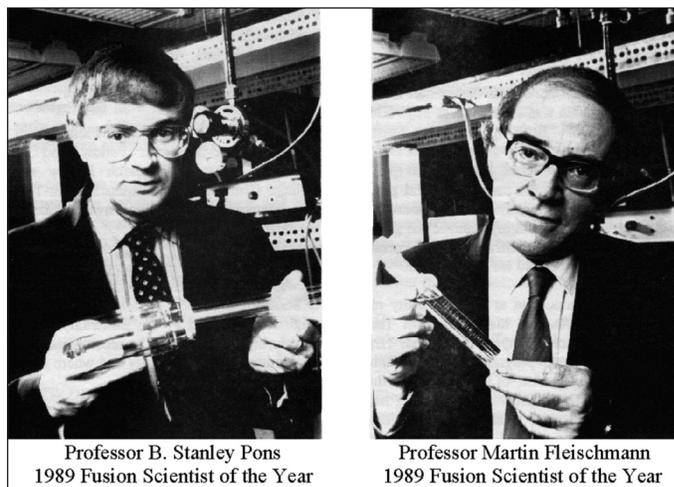
An essential function of *Fusion Facts* was to provide Fox's editorial comments as well as letters from readers. The opinions covered a variety of subjects, many of which concerned the rejected status of cold fusion. The conferences featuring cold fusion, particularly the International Conferences on Cold Fusion (through ICCF6 in 1996), were routinely announced in advance. Several of them were also reviewed and summarized in the newsletter.

Advertisements in Volume 1 included Seebeck calorimeters and stock offerings by a palladium mining company. Many other ads followed in subsequent issues. Fox also expressed a strong sense of humor in the form of cartoons and pithy quotes. Most of them were expressions of exasperation about cold fusion's rejection status and prominent skeptics.

### Fusion Facts Documentation Status

The *Fusion Facts* Documentation Project is being performed jointly by LENRGY's Research Documentation Initiative (LRDI) and the New Energy Foundation/*Infinite Energy*.<sup>3</sup> The project began by combining the monthly issues into one PDF file for each volume. This PDF file was then converted to Microsoft Word using Adobe Acrobat; this allowed for formatting the document, fixing typographical/input errors and placing items back in that had been missing from the original PDFs. A table of contents (TOC) was then created in Word for each of the eight volumes. The TOCs include the topics in the newsletters in the volume. The final, edited documents are converted back to searchable PDFs.

The *Fusion Facts* documentation project is a work in progress. Extensive editing and cleanup remain to be done on five of the eight volumes, and indexes are still to be prepared for Volumes 2-7. The editing and indexing have been



completed for Volume 1 as an example for the remaining volumes. We would like to acknowledge the editing and indexing assistance of Christy Frazier at *Infinite Energy*.

Soon, *Infinite Energy* will launch a Hal Fox Archive that will include the newly formatted Volumes 1-3 of *Fusion Facts* as well as the unformatted original PDFs of Volumes 4-8. Those original PDFs will have a TOC inserted. In the future, we hope to prepare Volumes 4-8 like the others. Later, the archive will also include Fox's other publications.

### Summary

Hal Fox contributed significantly to the cold fusion field in a number of ways for more than 20 years during its earliest period. His *Fusion Facts* newsletter is a primary source of information on what was being done—and where and by whom—in the field. It seems clear that when the phenomenon is understood more fully, the retrospective insights recorded in the newsletter will become important for improving cold fusion understanding.

### References

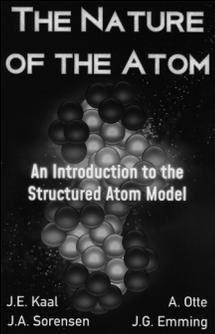
1. See the *Infinite Energy* memorial tribute for Hal Fox, [www.infinite-energy.com/images/pdfs/HalFox.pdf](http://www.infinite-energy.com/images/pdfs/HalFox.pdf)
2. First, in 1999 Hal Fox circulated a CD titled “The Science of the Future Began Yesterday,” which included all issues of the *Journal of New Energy* and most issues of *Fusion Facts* and *New Energy News* in PDF format. Fox later gave Bill Collis of the International Society for Condensed Matter Nuclear Science (ISCMNS) permission to post the material on its website. In 2008, for ICCF14, Collis provided a CD to all conference participants that contained, among other things, the Fox PDF collection. This CD is sold by *Infinite Energy* for \$5. *New Energy Times* has some of the Fox archive available online as well. *Infinite Energy* is in progress on a Hal Fox archive for its site.
3. See the *Infinite Energy* story about the LRDI in Issue 150, [www.infinite-energy.com/iemagazine/issue150/GrimshawIE150.pdf](http://www.infinite-energy.com/iemagazine/issue150/GrimshawIE150.pdf)



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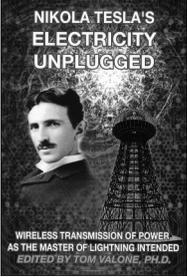
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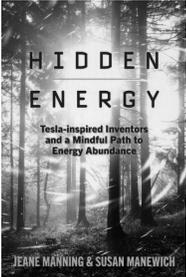
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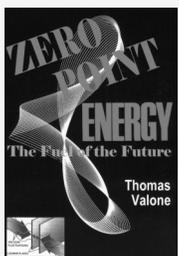
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