

Research Article

Mitigating the Loss of Irreplaceable LENR Research Records

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Abstract

An initiative is underway to document the records of cold fusion researchers while the information is still available. Now more than 30 years after the 1989 LENR announcement, many of these investigators are leaving the field. Projects under the LENR Research Documentation Initiative (LRDI) generally begin with a site visit where information is collected and interviews are conducted. Provision is made for securing the records, and a project report is prepared. More than 20 projects including over 25 participants and collaborators have been performed or are underway. The LRDI includes a major outreach effort to ensure participation and promote the overall standing of cold fusion. Future plans for the initiative call for additional participants and more in-depth coverage of research documented in previous projects. An integrated LRDI report including summaries of the individual projects is being prepared. Documentation of the large body of LENR research is essential both for the field and for humankind generally. Capturing the records enhances the prospects of the field by demonstrating the large amount of the information and the credibility of the researchers. The future of humanity depends on developing an inexhaustible supply of clean and inexpensive energy. LENR is one of the best candidates currently available to meet this need.

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1. Introduction

When cold fusion was announced by Martin Fleischmann and Stanley Pons in 1989, it seemed possible that the needs of humankind for inexpensive, clean and inexhaustible energy would be met for the foreseeable future [1], [2]. However, for a variety of reasons related to politics in society and within science, cold fusion (now often referred to as low energy nuclear reactions, LENR) was rejected by mainstream science. Consequently, the potential energy benefits of LENR were not rigorously pursued as a top priority. Nevertheless, a significant number of reputable scientists worldwide continued research in the phenomenon at the margins of mainstream science. Cold fusion did not die out like other rejected scientific claims. The principal issues of the field continue to be adequate reproducibility and an acceptable explanation, which is not uncommon for scientific discoveries.

Many of the LENR researchers began their work in the early months and years after the 1989 announcement. Because of its pariah status in the scientific world, few new investigators were attracted to the field. The determined

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researchers who continued have developed a large body of evidence for the reality of the phenomenon so that LENR may yet fulfill its promise as a major new source of energy. But now more than 30 years after the announcement, many of these investigators are leaving the field because of retirement, health issues and death.

The loss of their research records would be a tragedy not only for the LENR field, but also for all of humankind, given the continued promise of LENR as an energy source. The LENR Research Documentation Initiative (LRDI) is underway at LENRGY, LCC [3] to help mitigate the loss of these records. Its objectives are to preserve the records while they are still available and protect the information for future analysis as more understanding of LENR is gained.

2. Methods

The procedure of the LRDI [4] is straightforward (Figure 1). The collected records are supplemented with recorded interviews, and a research timeline is prepared. Arrangements are made for records preservation, and draft and final reports are prepared. Opportunities for additional work are normally included in the report and are pursued in a subsequent phase in many cases. In most projects, one or more site visits are made to gather information and conduct the recorded interviews. As progress is made, the components of the record are described in a series of memos. The collection of memos then serves as the basis for the project report.

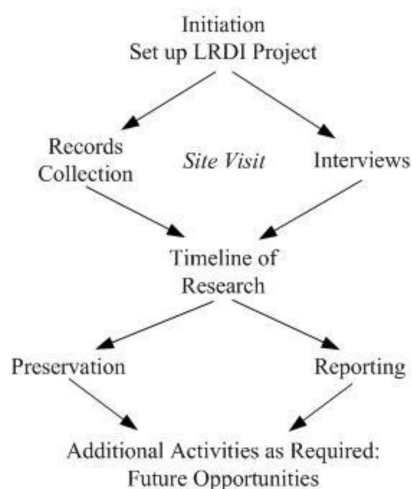


Figure 1. LRDI Procedure.

3. Projects and Participants

The LRDI has been privileged to engage some of the longest-standing and most prominent investigators in the LENR field. More than 20 projects are underway or have been performed under the umbrella of the LRDI [5], beginning with a pilot project with Dr. Edmund Storms [6]. The projects have included more than 25 participants and collaborators. They are listed in Table 1 generally in order of participation in the LRDI.

The methods of LRDI projects described above were mostly developed in a pilot project with Dr. Ed Storms and have been refined in subsequent projects. Given the thoroughness of his investigations and his comprehensive records, Dr. Storms proved to be a nearly ideal candidate for the pilot project. He is retired from Los Alamos National

Table 1. LRDI Participants and Collaborators

| | | |
|----------------|--------------|-------------------------------------|
| Storms, E. | Miles, M. | Beaudette, C. |
| Claytor, T. | Miley, G. | Mossier-Boss, P. |
| Fowler, M. | Tanzella, F. | Gordon, F. |
| Pease, D. | Imam, A. | Carat, R. |
| El-Boher, A. | Little, S. | Kowalski, L. |
| Hubler, G. | Little, S. | Lomax, A. |
| Nagel, D. | Passell, T. | Biberian, J. |
| Srinivasan, M. | Forsley, L. | Fox, H. |
| Letts, D. | Gluck, P. | University of Utah Marriott Library |
| | | SRI International |

Laboratory and has been a foremost LENR researcher going back to the 1989 announcement. He has written two books on the subject [7], [8]. He received the Preparata Medal, one of the most prestigious in the field, in 2005. Eight phases of his cold fusion work were identified in the Storms LENR Research Documentation Project. The results of the pilot project were presented as a poster at ICCF-21 in 2018 [9], and other LRDI projects followed soon afterward.

4. Project Components

As might be expected, the types and amounts of available research records are unique for each LRDI participant. In many cases, a LENR laboratory is available and is documented, including the experimental methods and equipment utilized. Typical project components are papers, presentations and unpublished reports, lab notebooks, and other hardcopy and the electronic files. Most participants have a library of LENR-relevant books, magazines and papers, often including proceedings of the International Conferences on Cold Fusion (ICCFs), as well as recorded media, such as DVD tapes and CDs. As noted above, a memo is prepared describing each component.

5. Future Project Opportunities

In many LRDI projects, more information is identified than can be included in the first set of memos and the initial report. These opportunities are noted in the report. For some participants, more work – including more site visits – is performed, and additional versions of the report are prepared.

6. Outreach

Several measures have been taken to “get the word out” on the LRDI and its objectives and methods. After the Storms pilot project was presented as an ICCF-21 poster in 2018, a presentation on methods and participants was made at the MIT CF/LANR workshop in early 2019 [10]. A comprehensive article appeared in Infinite Energy magazine in 2020 [11]. LRDI updates have been provided at ICCF-22 in 2019 [12], ICCF-23 in 2021 [13] and ICCF-24 in 2022 [14]. A 2022 paper has also been published in the JCMNS [15] on the LENR career of Dr. Mahadeva Srinivasan, one of the earliest and most productive researchers in the field. That paper is derived from the Srinivasan LENR Research Documentation Project, for which a report [16] had been prepared in 2020, not long before his death.

7. Why Must the Loss of LENR Research Records Be Mitigated?

Documentation and preservation of LENR research is important both to the field specifically and to humankind more generally. The cumulative body of the LENR research records provides ample evidence of the reality of the phenomenon. This evidence in turn establishes the basis for financial support of the field for conducting experiments and

developing an explanation. The records manifest the depth, breadth and quality of the work done in the field, which demonstrates the credibility of the participants.

The case for cold fusion is strengthened by recording as much of the evidence for its existence as possible. As more understanding of the phenomenon is gained, these previous records may be re-analyzed to help address the primary issues of insufficient reproducibility and inadequate explanation.

The benefit of lessons learned in the cold fusion case is another reason for careful documentation of past research. Given LENR's potential energy benefits, the obvious question of why it was rejected within a short time after it was announced demands better answers. Answers to this question may provide guidance on how to deal more constructively with revolutionary scientific claims in the future and protect the interests of humankind.

To the extent that it is able to displace current energy sources like fossil fuels and nuclear power, LENR will go far in ensuring the long-term habitability of the earth. The need of humankind for unlimited, cheap and clean sources of energy can hardly be overstated. Measures like documentation and preservation of the records will help LENR meet this urgent need and must be undertaken to enhance the long-term prospects of humanity.

The LENR research records must also be documented and preserved for proper recognition of the investigators who have pursued it in the face of rejection, and even ridicule, from the scientific establishment. Many of them have persisted despite damage to their professional careers as they pursued the phenomenon both for the advancement of science and for possible financial gain. Particularly if and when the potential cold fusion benefits are finally realized, these determined pioneers in this new scientific field will deserve the recognition and gratitude of all of humanity.

8. Where to from Here?

An integrated report that includes a chapter for each LRDI participant is underway. Provision is made for review of each chapter by its participant (if available) in order to meet confidentiality provisions of the initiative. At the same time, more participants may be added, and more work on previous projects may be undertaken as identified in the future opportunities section of the reports. Solutions are being evaluated for a central repository for the LRDI information to ensure both adequate security and easy access by the participants.

Acknowledgments

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