

## ***The CFRL English News No. 119 (December 10, 2023)***

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Websites: <http://www.kozima-cfrl.com/News/news.html/>

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**CFP (Cold Fusion Phenomenon)** stands for

*“Nuclear reactions and accompanying events occurring in open (with external particle and energy supply), non-equilibrium system composed of solids with high densities of hydrogen isotopes (H and/or D) in ambient radiation” belonging to Solid State-Nuclear Physics (SSNP).*

This is the ***CFRL News No.119*** (December 10, 2023) for Cold Fusion researchers published by Dr. H. Kozima, at the Cold Fusion Research Laboratory, Shizuoka, Japan.

This issue contains the following items:

1. **H. Kozima, “The Cold Fusion Phenomenon and the ARPA-E Project 2022 of DOE: A Facet of the Sociology of Modern Science” was published in the *Proceedings of JCF 23*, pp. 6 – 36 (2023), ISSN . 2187-2260**
  2. **JCF24 was held in Sendai on December 1 – 2, 2023.**
  3. **H. Kozima, “A Comment on the paper “J.-P. Biberian, L. Forsley and P. Mosier-Boss, ‘Transmutation of Palladium Induced by Laser Irradiation,’ *J. Condensed Matter Nucl. Sci.*, 37 (2023) 9–22. ISSN 2227-3123.” is submitted to *J. Condensed Matter Nucl. Sci.***
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1. **H. Kozima, “*The Cold Fusion Phenomenon and the ARPA-E Project 2022 of DOE: A Facet of the Sociology of Modern Science*” was**

**published in the *Proceedings of JCF 23*, pp. 6 – 36 (2023), ISSN 2187-2260.**

The paper on the title of this article presented at the JCF23 was published in the Proceedings of JCF23 and posted at the following JCF23 website and also posted at the ResearchGate website.

JCF website: <https://jcfrs.org/file/jcf23-proceedings.pdf>

ResearchGate site: [https://www.researchgate.net/profile/Hideo\\_Kozima](https://www.researchgate.net/profile/Hideo_Kozima)

The proceeding of the above paper is cited below for your convenience.

### **“Abstract**

A sociological perspective for the development of the cold fusion phenomenon (CFP) or the LENR is given in relation to the ARPA-E Project 2022 (referred as “Project” in this paper, hereafter) proposed by DOE, USA on September 13, 2022. Brief summary of characteristics of the experimental data obtained in the CFP closely related to the *Requirement of the Project* is given in relation to the character of the Project. The nature of modern science strongly bound to the social requirement rather than the scientific value itself is discussed using this case as a typical example.

The most important characteristics of the CFP in relation to the Project are the qualitative reproducibility observed and confirmed in the cold fusion materials: The lack of quantitative reproducibility in the CFP, one of the main targets against the CFP raised at first by Huizenga in his book and followed by many critics and opponents, has been an obstacle to understand and to accept the CFP as a part of modern science. We have analyzed and explained the characteristics of the CFP in relation to the qualitative reproducibility using the laws of complexity in nonequilibrium open systems with nonlinear interactions between components. The direct appearance of the laws of complexity in physics is a very rare case and this fact observed in the CFP is the main reason why the science of the CFP is not easily reconciled with the commonsense knowledge of the modern science where the quantitative reproducibility prevails widely due to the linear interaction in the relevant systems.

The requirement of the Project includes “A key goal of the Exploratory Topic (ET),” which demands “The convincing empirical evidence of nuclear reactions in an LENR experiment and publication of the evidence in a top-tier peer-reviewed research journal.” The first requirement is a natural one for the novel science including nuclear reactions in solids where is no specific mechanism to accelerate nuclei up to energies possible for usual nuclear reactions considered in nuclear physics hitherto.

It has been shown that the requirement has long been a main obstruction to publish results obtained in this field in the top-tier peer-reviewed research journals for about 30 years. It is, therefore, very difficult to attain the requirement of the Project by the fortunate sudden change of the attitude of the research journals induced by expected several new experimental data in the Project in a required short period less than 3 years.

It is concluded that the overall object of the Project is too difficult to attain in the asked period of 30 months due to the nature of the CFP even if the Project is able to stimulate recognition of the importance of the qualitative reproducibility ubiquitous in many-body systems. The requirements of the Project may help to shift the tendency of research in this field from application to scientific direction to confirm nuclear reactions in the CF material rather than to pursue materials with higher excess-energy production.”

## **2. JCF24 was held in Sendai on December 1 – 2, 2023.**

The 24<sup>th</sup> Annual Meeting of the Japan CF-research Society was held in Sendai at the Research Center for Electron Photon Science, Tohoku University on December 1 – 2, 2023.

The information about the Meeting is posted at the following JCF website;

Program: <https://jcfrs.org/JCF24/jcf24-program.pdf>

Abstracts: <https://jcfrs.org/JCF24/jcf24-abstracts.pdf>

A part of the Program of the Meeting is cited below for your convenience;

### **Program of JCF24 Meeting**

**Session 1** Chair: M. Kishida (Kyushu U.)

**JCF24\_01**, K. Naitoh et al., “Fluid mechanics on anomalous temperature increase in metal composite powder exposed to pulsed high-pressure hydrogen gas.

**JCF24\_02**, Y. Iwamura et al., “Anomalous heat generation experiments with Ni-based nanostructured metal composites and hydrogen gas: consideration by material and gas analysis.

**JCF24\_03**, T. Itoh et al., “IR and Light Radiation Analysis for Spontaneous Heat Burst during Hydrogen Desorption from Nano-sized Metal composite.”

Break

**Session 2** Chair: Y. Iwamura (Tohoku U.)

**JCF24\_04**, F. Celani et al., “Attempts of self-replication of AHE generation by pulsed operations on Constantan wires, inverse coaxial geometry, under H<sub>2</sub>-Ar gas at high temperatures: role of pulse polarity and shapes.

**JCF24\_05**, T. Nemoto et al., “Improving Excess Heat Measurement in Hydrogen

Desorption Experiment.”

Break

**Session 3** Chair: S. Narita (Iwate U.)

**JCF24\_06**, S. Higashi et al., “Detection of He-3 Trapped in CuNiZr Materials by Thermal Desorption Spectrometry.”

**JCF24\_07**, H. Miura, “Computer Simulation on the Reactions of Band Gaps Collided by Protons/Deuterons.”

**JCF24\_08**, R. Furui, “The Design of a Low-Energy Nuclear Battery.”

## **Reception**

December 2 (Sat), 2023

**Session 4: Industrial Application Session** Chair: K. Naitoh (Waseda U.)

**JCF24\_09**, A. Takahashi, “New Hydrogen Fusion Energy.”

**JCF24\_10**, G. Terabayashi, “Climate change measures and expectations for new energy.”

**JCF24\_11**, K. Ooyama, “Metal Crystal confinement Fusion Reactor.”

**JCF24\_12**, “T. Yoshizawa, “Development of a low-vibration new type internal combustion engine by using Z-Mechanism and potential applications of this mechanism.”

**3. H. Kozima, “A Comment on the paper “J.-P. Biberian, L. Forsley and P. Mosier-Boss, ‘Transmutation of Palladium Induced by Laser Irradiation,’ *J. Condensed Matter Nucl. Sci.*, 37 (2023) 9–22. ISSN 2227-3123.” was submitted to *J. Condensed Matter Nucl. Sci.***

This paper was submitted to the JCMNS with following abstract on September 20 with no response at all at present (December 10, 2023).

### **Abstract**

The experimental result reported by Biberian et al. in the paper written in the title of this paper is analyzed from our point of view. We found several ambiguities in their report and proposed further experiments to clarify the problems pointed out in this paper.