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常温核融合現象 CFP (The Cold Fusion Phenomenon)は、「開いた（外部から粒子とエネルギーを供給され、背景放射線に曝された）、非平衡状態にある、高密度の水素同位体(Hand/D)を含む固体中で起こる、核反応とそれに付随した事象」を現す言葉で、固体核物理学(Solid-State Nuclear Physics)あるいは凝集体核科学(Condensed Matter Nuclear Science) に属すると考えられています。

CFRL ニュース No.102 をお送りします。この号では、次の記事を掲載しました。

1. JCF17 が開催されました

Program of the JCF17 Meeting is posted at JCF Website:
http://jcfrs.org/JCF17/jcf17-program.pdf

プログラムを下に引用します。
Program of JCF17 Meeting
Japan CF-Research Society
Date; March 19-20, 2017

March 19 (Sun), 2017
12:00-13:00 **Registration**
13：00-13:10 **Opening Address** K. Tsuchiya (NIT, Tokyo)
Session 1 *Chairman; K. Tsuchiya (NIT, Tokyo)*
13:10-13:40 **JCF17_01** H. Numata

Microscopic structural change of Pd rod during repeated cathodic and anodic electrolysis
in glycerin-phosphoric acid and during long-term electrolysis in 0.1M Li OD
13:40-14:10 **JCF17_02** T. Sawada (Hosei U.)
Role of the magnetic monopole as the catalyst in the cold fusion
14:10-14:40 **JCF17_03** F .H. Ling et al. (Anthropocene Institute)
Global Assessment of Investment in LENR: Challenges and Outlook
14:40-15:00 ***Break***
Session 2 *Chairman; S. Narita (Iwate U.)*
15:00-15:30 **JCF17_04** A. Kitamura et al. (Technova Inc.)
Heat evolution from silica-supported nano-composite samples under exposure
to hydrogen isotope gas
15:30-16:00 **JCF17_05** Y. Iwmura et al. (Tohoku U.)
Anomalous Heat Generation Experiments Using Metal Nanocomposites
and Hydrogen Isotope Gas
16:00-16:30 **JCF17_06** T. Hioki et al. (Nagoya U.)
Synthesis of Nano-Pd Particles Included in Pores of Mesoporous Silica
and Their Thermal Stability under Hydrogen Atmosphere
16:30-17:00 **JCF17_07** M. Uchimura et al. .(Nissan Motor Co., Ltd)
Materials structure clarification for novel exothermic reaction between metal and hydrogen

March 20 (Mon), 2017
Session 3 *Chairman; Y. Iwamura (Tohoku U.)*
10:00-10:30 **JCF17_08** T. Itoh et al. (Tohoku U.)
Anomalous Excess Heat Generation by the Interaction
between Nano-structured Pd/Ni surface and D2/H2 gas
10:30-11:00 **JCF17_09** S. Narita et al. (Iwate U.)
Characterization of deuterium diffusion in multi-layered metal sample
11:00-11:30 **JCF17_10** M. Nakamura (Nissan Motor Co., Ltd)
Expectations on the new heat-generation-reaction between metal and hydrogen

11:30-13:00 ***Lunch***
Session 4 *Chairman; H. Numata*
13:00-13:30 **JCF17_11** H. Miura
Possibility of Nuclear Transmutation and Nuclear Fusion Related to Water Clusters

13:30-14:00 **JCF17_12** H. Kozima et al. (CFR Lab.)
Nuclear Transmutations in Critical and Supra-critical Electrolysis
with Graphite, Pd, W, Re, Pt and Au Cathodes Analyzed by the TNCF Model
14:00-14:30 **JCF17_13** H. Kozima et al. (CFR Lab.)
The Sociology of the Cold Fusion Phenomenon
14:30-15:00 **JCF17_14** M. Ban
Cold fusion by resonance of de Broglie wave in Multiple barrier tunnel phenomenon I
15:00-15;30 **JCF17_15** M. Ban
Cold fusion by resonance of de Broglie wave in Multiple barrier tunnel phenomenon II
15:30-16:00 **JCF17_16** K. Tsuchiya (NIT, Tokyo)
Progress of density functional methods in LENR and their problems
16:00 ***Adjorn***

2. CFRL から2編の論文が Proc. JCF17 に発表されました

The Abstracts of papers presented at JCF17 have been posted at JCF Website:
http://jcfrs.org/JCF17/jcf17-abstracts.pdf

Abstracts of Two Papers from CFRL are cited here for readers' convenience.
(1) *Proc. JCF17*, **17-12** Kozima, Ohmori and Ohta

Nuclear Transmutations in Critical and Supra-critical Electrolysis with Graphite, Pd, W, Re, Pt and Au Cathodes Analyzed by the TNCF Model

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Abstract

Nuclear transmutations observed in the surface region of C (graphite), Pd and 5d elements (W, Re, Pt and Au) cathodes used in critical and supra-critical electrolysis with light water are analyzed using the trapped neutron catalyzed fusion (TNCF) model in accordance with the cold fusion phenomenon (CFP) observed in such 3d and 4d

transition-metal hydrides and deuterides as NiH_x and PdD_x at the normal electrolysis. In the critical electrolysis, the temperature of the cathode, e.g. Pd, was raised to ca. 85 ℃ from that at normal electrolysis of about 60 – 70 ℃ and the electrode potential began to fluctuate up and down like a wave. After a few minutes reaching this stage, there occurs a glow discharge and the electrode became incandescent condition (this stage of electrolysis is termed “supra-critical electrolysis”).

Surprisingly enough, there have been observed CFP in C (graphite) and 5d elements (W, Re, Pt and Au) electrodes used in light water electrolysis at these critical and supra-critical electrolysis similar to the events of CFP observed in 3d- and 4d-transition metals in light and heavy water electrolysis.

The occurrence of the cold fusion phenomenon in critical and supra-critical electrolysis resulting in the nuclear transmutation in these cathodes is consistently interpreted by the TNCF model with the CFP in PdD_x and NiH_x at the normal electrolysis; it should be noticed that the higher temperatures of the material realized by the critical and supra-critical electrolysis are favorable for the non-localization of protons(/deuterons) wavefunctions in these hydrogen non-occluding materials at near room temperature which is one of the necessary conditions for formation of trapped neutrons in the TNCF model.

(2) JCF**17-13** Kozima, Ohmori and Yamada

The Sociology of the Cold Fusion Phenomenon

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Abstract

In the modern society, science and technology are called sometimes “science and technology” (science-technology complex, science-technology conglomerate) all together and supposed to be the same thing. However, they should be considered different thing in nature. Science and technology contain the same knowledge together

but differ in which they aim at. The object of the science is just to know about the target and ends its activity when it is obtained. However, the technology does not finish its activity only by knowing the target but uses it for another purpose. And for these purposes, the scientific knowledges are sometimes rearranged, i.e. “A causes B” is transformed into “To get B, find out A.” Of course, it is usual to cultivate new techniques for scientific activity but only for the scientific objects. In technology, however, the purpose of the innovation is not only for the new scientific knowledge but also for the technical application. The pile up of the technical endeavor forms a system of technical methodology different from the system of scientific methodology.

Even if the former is overwhelming the latter in the modern world of technological economy, it should be emphasized that the scientific spirit has its special value for human society. In reality, the scientific spirit is diminishing as well as aesthetic and moral spirits in our society. Especially in the history of the cold fusion phenomenon, we see how the scientific spirit is overwhelmed by the entrepreneur desire and a science is in agony to be well-born in the world and be recognized its true value.

The history of the controlled nuclear fusion research substantially started in 1950s on one hand and that of CFP started in 1989 on the other show the overwhelming influence of the former on the latter, i.e. researches on the cold fusion phenomenon, as shown by the sociology of the science developed in the 20th century. The necessary conditions for the recognition of the cold fusion phenomenon as a part of the modern science are pointed out. It is pointed out that the most important factors preventing recognition of the CFP as a scientific research field are (1) the biased preference of deuteron systems affected by the hot fusion research, (2) neglect of unified perspective of the experimental facts obtained in protium and deuterium systems and (3) lack of recognition that the CFP belongs to an interdisciplinary science between nuclear and solid-state physics.

3. ICCF20 が October 2 – 7, 2006 に仙台で開かれました

ICCF20 が October 2 – 7, 2006 に仙台で開かれました。

この会議の詳細は、次のウェブサイトに記載されています。

https://www.facebook.com/iccf20/

https://ja-jp.facebook.com/iccf20/

A. Kitamura and K. Tsuchiya による ICCF20 報告書が JCF のサイトに公開されていま

す:
http://www.jcfrs.org/file/iccf20-report.pdf