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ANALYSIS AND PERSPECTIVES

5. The Widom-Larsen Not-Fusion Theory

<http://front.math.ucdavis.edu/author/A.Widom>

By Steven B. Krivit

[Note: This article is about 32 pages in length and contains about 12,000 words. Readers may skip to the end if they would like a summary of my [observations and conclusions](#). Readers may go to this [Web site](#) for a brief technical overview of the theory or this [Web site](#) for a more detailed review of the theory.]

Contents

1. [A Controversial Theory](#)
2. [Approach 1: Other Viable CMNS Theories, Part 1](#)
3. [Approach 1: Other Viable CMNS Theories, Part 2](#)
4. [Approach 1: Other Viable CMNS Theories, Part 3](#)
5. [Approach 2: Critique of Widom-Larsen Theory From CMNS Community](#)
6. [Approach 3: Critique of Widom-Larsen Theory From Scott Chubb](#)
7. [Observations and Conclusions of CMNS Community Response](#)
8. [Approach 4: Brief Critique of Widom-Larsen Theory From Richard Garwin](#)
9. [Resources](#)

"We've established a sustained nuclear fusion reaction."

-Martin Fleischmann and Stanley Pons, March 23, 1989

" ... the bulk of the energy release is due to an hitherto unknown nuclear process or processes ... "

-Martin Fleischmann, Stanley Pons and Marvin Hawkins, April 10, 1989

"There are some curious reports - not cold fusion, but people may be seeing some unexpected low-energy nuclear reactions."

-Robert Park, on the subject of "cold fusion," March 22, 2007

(One of the most outspoken skeptics of "cold fusion" in the previous 19 years)

"It isn't quite cold, and it's probably not fusion, but something is going on."

-Sir Arthur C. Clarke, on the subject of "cold fusion," Dec. 15, 2007

(One of the most prominent supporters and philanthropists of "cold fusion" in the previous 19 years)

What convinced me, and many other people, of the reality of this field was the experimental work. We analyzed the experimental studies, cross-referenced them among various laboratories around the world over many years, found no significant errors of procedure or data analysis and saw unmistakable correlation among the data.

If a viable theory explains 19 years of an experimental mystery, this should be cause for celebration, not bitterness.

"Cold fusion" has followed a true path of the scientific process. It began with experiment, observation. If Widom and Larsen are partially or fully correct, bravo to them! If other theorists are partially or fully correct, bravo to them, as well. But show me the math, please.

That led me nowhere, and I paid little attention to theory for quite a while.

The first data point on this trail occurred on May 29, 2005. Vincenzo Valenzi, coordinator of the Centro Studi di Biometeorologia of Rome, included me on a distribution that reported a seminar given by Widom that was held at the University of Rome-3 on May 27, 2005, titled "Weak Interaction and Cold Nuclear Reaction." Francesco Celani also sent an e-mail to his colleagues encouraging people to attend the Widom seminar.

Valenzi said the seminar had been organized by himself, Gianni Degli Antoni and Flavio Fontana of Milan, Paolo Manzelli of Florence and Fulvio Bongiorno of University of Rome-3.

Valenzi said the reaction from Bongiorno, professor of mathematical analysis, was that the "presentation of Widom was very important and rich of possibility to develop something like a new Manhattan Project."

But I didn't pay any attention to this matter until June 2005, when David J. Nagel, a professor at the George Washington University encouraged me to look at the Widom-Larsen paper. Nagel, a physicist who worked for 36 years at the Naval Research Laboratory, considered the Widom-Larsen paper worthy of serious attention, and he thought that it might prove to be a viable mechanism for "cold fusion." I told Nagel that it looked Greek to me, and he helped me understand a few of the basic concepts.

In November, I got wind of another small conference in Italy on Oct. 14 that featured Widom. I also saw a flurry of lively e-mail exchanges with many Italian scientists and a few Japanese scientists.

I read an optimistic quote about the Widom-Larsen theory from Lino Daddi, a physics professor with the Italian Naval Academy.

"Perhaps we have a theory that explains all the anomalous phenomena," Daddi wrote.

"The transmutation observed from Yasuhiro Iwamura [Mitsubishi Heavy Industries] are explained without the problematic multiple reactions" of others' theories, Daddi wrote.

I also received an e-mail from physics Nobel laureate Brian Josephson, who looked at the first Widom-Larsen paper.

Josephson wrote that he considered their work "highly significant, since the physics may well be sound."

I looked back at my notes and found this report by Valenzi, translated by Yogi Srivastava, which I had not read in detail at the time, from the day after the Widom seminar.

Rome: 28 May 2005

On Friday, May 27, 2005, a meeting was organized at the University of Rome III to discuss the controversial aspects shrouding low energy nuclear transmutations. The meeting was addressed by Allan Widom, professor of theoretical physics at Northeastern University, Boston, Mass., U.S.A., by Drs. Giuseppe Quartieri and Vincenzo Valenzi from the Center of Biometrology, Rome, and by Dr. Francesco Celani from INFN, Laboratorio Nazionali di Frascati, Italy. Professor Fulvio Bongiorno from the Department of Mathematical Analysis, University of Rome III, acted as the host and

Widom presented a lively and personal account of his involvement with various aspects of low energy nuclear reactions containing precise theoretical and experimental details. Quartieri and Celani illustrated their own involvement with specific issues concerning nuclear reactions. Valenzi discussed fundamental philosophical issues associated with the problem of nuclear reactions and the hypothesis of clean energy production, which is completely biodegradable, leaving no dangerous radioactive residue.

Such research has been subjected to extreme difficulty because of a remarkable opposition from many sources. Hence, the "engagement" and the depth of the above contributions lead one to recall the period around 1940 when far-reaching studies into the atomic nuclei were carried out. One may even be tempted to bet on the success of the present endeavors.

At its base, there was an ample discussion covering two cardinal issues of security and pollution, both essential.

An affectionate homage was paid to the memory of Professor Giuliano Preparata, a well-remembered master, whose scientific contributions in this field remain alive and well.