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Why You Should Believe Cold Fusion is Real

Edmund Storms

Lattice Energy, LLC

History

- 1989 - Discovery by Profs. Fleischmann and Pons.
- 1989 - Physics community concludes at Baltimore APS Meeting that “Cold Fusion” is not real.
- 1989 - Government (ERAB Panel) concludes that “cold fusion” claims are not credible.
- 1989 to 2004 - Many articles and several books conclude that “cold fusion” claims are not believable.
- 2004 - Re-examination of subject by DOE concludes that “cold fusion” claims are not believable.

MYTH #1

BELIEF: Nothing has changed since 1989.

FACT:

1. A claim for anomalous energy production is now supported by numerous studies using a variety of calorimeter designs, by many different laboratories world-wide.
2. Evidence for unexpected nuclear reactions, in addition to fusion, has been reported based on emitted radiation and accumulated reaction products.
3. Reproducibility using certain methods has now reached levels normally considered adequate.
4. A variety of methods can be used to initiate both anomalous energy and nuclear reactions of several types.
5. A rich collection of explanations is now being actively explored.

MYTH #2

BELIEF: Only a few true believers are interested.

FACT: Numerous institutions and companies are active in the field, including the following:

Russia(8)

- LUTCH Federal State Unitary Enterprise, Podolsk, Russia
- Joint Institute for Nuclear Research, Dubna, Russia
- Institute in Physical -Technical Problems, 141980, Dubna, Russia
- P.N. Lebedev Physics Institute, Moscow, Russia
- Enikolopov Institute of Synthetic Polymer materials, Russian Academy of Science, Moscow, Russia
- “RECOM”, Russian Research Center “Kurchatov Institute”, Russia

- General Physics Institute, Russian Academy of Science, Russia
- Chelyabinsk State University, Russia

Ukraine(2)

- Proton-21 in Kiev, Ukraine
- Kiev Shevchenko University, Kiev, Ukraine

Italy(14)

- University of Lecce, Lecce, Italy
- La Sapienza University, Rome, Italy
- University of Siena, Siena, Italy
- University of Bologna, Bologna, Italy
- Ente per le Nuove Tecnologie, l'Energia e l'Ambiente (ENEA), Rome, Italy
- Instituto Nazionale de Fisica Nucleare, Laboratori Nazionali di Frascati (INFN-LNF), Rome, Italy

- EURESYS, Rome, Italy
- ORIM Srl, Macerata, Italy
- Pirelli Labs, Milan, Italy
- Centro Sviluppo Materiali SpA, Rome, Italy
- State University of Genoa, Genova, Italy
- Liceo Scientifico “Leonardo da Vinci”, Milan, Italy
- STMicroelectronics, Milan, Italy
- Department of Physics, University of Catania, Italy

Japan(10)

- Hokkaido University, Sapporo, Japan
- Advanced Technology Research Center, Mitsubishi Heavy Industries, Yokohama, Japan

- Japan Synchrotron Radiation Research Institute, Japan
- Coherent X-ray Optics Laboratory, Spring-8/RIKEN, Japan
- Laboratory for Nuclear Science, Tohoku University, Mikamine, Sendai Japan
- Center for Advanced Science and Innovation, Osaka University, Osaka, Japan
- Cold Fusion Research Laboratory, Shizuoka, Japan
- Division of Environmental Energy Science, Graduate School of Science and Technology, Kobe University, Japan
- Fukaeminami-machi, Higashinada-ku, Kobe, Japan
- Institute of Quantum Science, Nihon University, Tokyo, Japan

China(4)

- Institute of Chemistry, Chinese Academy of Sciences, Beijing, China
- Tsinghua University, Beijing, China
- Institute of Plasma Physics, Hefei, China
- Changchun University of Science and Technology, Changchun, China

France(3)

- Laboratoire de Recherches Associatives, Franconville, France
- CNAM - Laboratoire des Sciences Nucléaires, Paris, France
- CRMCN-CNRS, Campus de Luminy, Marseille, France

United States(18)

- Howard University, Washington, D.C., US
- Purdue University, Lafayette, Indiana, US
- SRI International, Menlo Park, CA, US

- Naval Research Laboratory, Washington, D.C.,
- Oak Ridge National Laboratory, Oak Ridge, Tennessee,
- Lattice Energy LLC, Chicago, IL,
- The Greenview Group, Pleasanton, CA,
- Research Systems, Inc, Burke, VA,
- Greenwich Corp., Arlington VA,
- Low Energy Nuclear Laboratory, Portland State University, Portland, OR,
- Research Laboratory of Electronics, MIT, Cambridge, MA,
- Fusion Studies Laboratory, University of Illinois, Urbana, IL,
- Montclair State University, Passaic NJ,
- University of Minnesota, Minneapolis, MN,
- First Gate Energies, Kilauea, HI,
- JET Thermal Products, Wellesley, Massachusetts,
- SPAWAR Systems Center, San Diego, CA,
- Earth Tech International, Austin, TX,

Others

- Institut für Atomare Physik und Fachdidaktik, Technische Universität, Berlin, Germany
- Energetics Technologies, Omer, Israel
- University of New South Wales, Sydney, Australia
- University Lucian Blaga, Sibiu, Romania
- National Academy of Sciences, Belarus

MYTH #3

BELIEF: Claimed anomalous energy is caused by some prosaic process or storage mechanism.

FACT:

1. Every suggested prosaic explanation has been addressed and found inconsistent with the behavior. See "Cold Fusion: An Objective Assessment" at www.LENR-CANR.org.

2. Energy is not the result of storage and subsequent release because:

a. Energy generation starts too quickly to result from storage.

b. No one has identified a specific storage mechanism that can explain the anomalous heat.

MYTH #4

BELIEF: Claims for heat production are caused by calorimeter error.

FACT:

Modern calorimeters are sufficiently accurate and sensitive to reliably measure claimed energy because:

a. Many calorimeters applied to Cold Fusion are accurate to ±50 mW.

b. Energy in excess of 1000 mW is frequently measured.

c. Hundreds of observations for excess heat have been obtained using many kinds of calorimeters.

MYTH #5

BELIEF: Nuclear products have not been detected.

FACTS:

- 6 studies showed relationship between helium production and heat generation,
- 21 studies produced tritium,
- 31 studies detected transmutation products.
- Emitted nuclear radiation is frequently detected.

What is believed to be true?

1. Energy is released from exothermic nuclear reactions without the need for the expected energy to overcome the Coulomb barrier.
2. A variety of nuclear reactions can be initiated, which can involve all isotopes of hydrogen as well as other elements.
3. Very little radiation results from these reactions.
4. Several novel mechanisms operate to produce the effect, but only at low ambient energy in a special periodic assembly of atoms.
5. Understanding these novel mechanisms has the potential to revolutionize solid-state physics and the clean energy has the potential to solve many problems caused by conventional energy sources.

More information can be found at

www.LENR-CANR.org