

SCIENCE : DISCOVERIES 

## March 23, 1989: Cold Fusion Gets Cold Shoulder

By Randy Alfred  03.23.09

**1989:** Two electrochemists announce they've produced energy with a fusion reaction in a benchtop apparatus at room temperature. The world reacts with surprise, skepticism and, ultimately, derision.

Stanley Pons of the University of Utah and his mentor, Martin Fleischmann of Britain's University of Southampton, made the startling revelation in a news conference 20 years ago today in Salt Lake City. They claimed they had fused the atomic nuclei of deuterium (heavy hydrogen) using routine electrochemical techniques. Each deuterium nucleus with one proton and one neutron would couple with another nucleus to create a helium nucleus with two protons and two neutrons, plus extra energy that could be harvested for human use.

Pons and Fleischmann's glass percolator used two electrodes and heavy water (with deuterium rather than ordinary hydrogen), and they said the simple apparatus put out up to **100 percent more energy** than was required to run it.

Until that time, only hot fusion reactions had produced energy in more than minuscule amounts for more than fleeting periods of time. And we mean hot, like a **million degrees** or so. Think about the sun and other stars on the one hand, or the uncontrolled chain reaction of a

hydrogen bomb on the other. Not exactly benchtop stuff.

If the experiment could be replicated, and then scaled up to industrial production, it promised a nearly limitless supply of cheap, clean energy. If ...

Questions quickly arose. Pons and Fleischmann were not experts in quantitative isotope analysis. A few labs rushed into experiments that seemed to confirm the findings, but the researchers were often outside *their* areas of expertise as well. When they belatedly added sufficient controls to their experiments, the allegedly confirmatory results vanished, and many labs had to issue embarrassing retractions.

An MIT team soon found big problems with Pons and Fleischmann's gamma-ray spectra. There were no signs of nuclear processes, specifically of any neutron activity. When the U.S. Department of Energy concluded in October that cold fusion was not demonstrated, cold-fusion advocates complained they were being politically victimized by the hot-fusion and particle-physics establishment.

After it couldn't replicate the earlier results, the University of Utah discontinued cold-fusion research in 1991 and allowed its [cold-fusion patents to lapse](#) in 1998. Pons and Fleischmann left for the south of France in 1992 to continue research for a Toyota subsidiary. But even Japan's government stopped funding cold-fusion research in 1997.

Nonetheless, a network of [dedicated cold-fusionists](#) still toils away in a vineyard that looks pretty barren to almost everyone else.

*Source: Physics World, others*