

## EXPERIMENTAL EVIDENCE FOR "COLD FUSION"

Over 300 papers have been published or presented at conferences that provide experimental data in support of the original announcement by Pons and Fleischmann. In addition, many other papers have been written to report on new "cold fusion" phenomena, some of which have greatly surprised even Pons and Fleischmann.

Some of these papers report on "transmutation." For some scientists, the use of the term **transmutation** is unacceptable. The logic behind this rejection of the term is unclear. **Most nuclear reactions involve change from one element to another. Nuclear reactions involve changes to the nuclei either by fusion or by fission.** Experimental **cold nuclear fusion** is a record of elemental changes.

If one carefully examines all of the possible nuclear reactions that are allowed by the Conservation of Charge, allowed beta processes, Conservation of Baryon Number, etc., there are 338 such possible nuclear reactions **which DO NOT emit neutrons.**

There are very few possible (allowed) nuclear reactions that emit neutrons. One of the well-known branching ratios of  $d + d$  fusion is that **under gas plasma conditions**, about 50% of the time neutrons are produced. The experimental fact that few neutrons are produced in the variety of cold nuclear fusion experiments has been used by the pathological skeptics as evidence that cold fusion is not real. In fact, this is about the only basis they have for their sustained avoidance of the many positive indications of nuclear reactions.

The following papers provide an array of experimental evidence that supports the claims for a variety of nuclear reactions that appear to occur in many cold fusion experiments. However, healthy skepticism should be exercised. There may be new phenomena involved in these experiments that produce excess heat without producing nuclear reactions. Specifically, two new phenomena **could explain some of the observed experimental findings:** these are (1) the possibility of a collapse of the hydrogen atom below its ground state (as first proposed by Mills, and discussed in this volume by Vigier), and (2) the ability of high-density charge clusters to produce excess energy as taught by Ken Shoulders (U.S. patent 5,018,180) and Harold E. Puthoff. High density charge clusters can be produced under appropriate conditions whenever electric discharges, arcing, or sparking occur.