



Low Energy Nuclear Reactions

historically known as “Cold Fusion”

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Background

- **March 23, 1989: Pons and Fleischmann** announcement that electrochemical cells are producing more heat than can be accounted for by chemical means and therefore, speculated that nuclear reactions must be occurring.
- **Thousands of scientists attempt experiments, most fail**
- **Physics community asks “where are the neutrons?”**
- **November 1989: DOE releases report**



November 1989 DOE Report

“...with the many contradictory existing claims it is not possible at this time to state categorically that all the claims for cold fusion have been convincingly either proved or disproved.”

Recommendations: (6 in all)

- 1. The Panel recommends against any special funding for the investigation of phenomena attributed to cold fusion.**
- 2. The Panel is sympathetic toward modest support for carefully focused and cooperative experiments within the present funding system.**



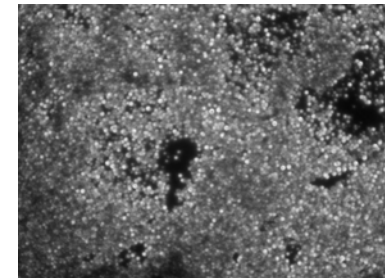
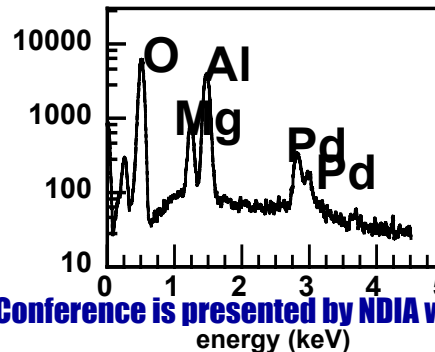
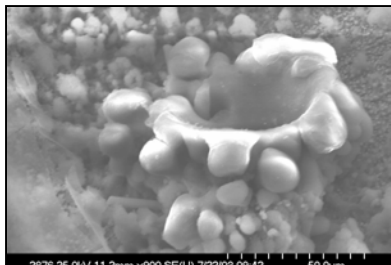
Last 17 years

- **Small groups of scientists worldwide have continued to perform experiments**
 - **Results include reports of:**
 - **Excess Heat, ^3He , ^4He , Excess Tritium, localized surface disruptions, transmutation to light metals, measurements of alpha and proton particles**
 - **Many publications in peer-reviewed technical journals**



Current Situation

- **Worldwide interest increasing**
 - Japan experiments and scientists recognized
 - Italian ENEA signed an agreement with Pirelli
- **Experimental evidence increasing**
 - Experiments producing nuclear particles offers direct evidence of **Low Energy Nuclear Reactions**
 - Different experimental protocols produce similar results





Two Breakout Sessions Today

- **Time: Session 1 at 4 pm**
Session 2 at 5pm

Location Room: Wilson A & B

(Mezzanine Level 1)

- **More details, including two presentations of specific experimental results**
- **More time for Q&A**