Verifications of Francesco Celani's LENR Observations in Nickel-Copper Alloy (Constantan) and Hydrogen Experiments

Thomas W. Grimshaw, The University of Texas at Austin, Austin, TX
Stefano Concezzi and Brian Glass, National Instruments, Austin, TX

Celani Demonstrations, August 2012

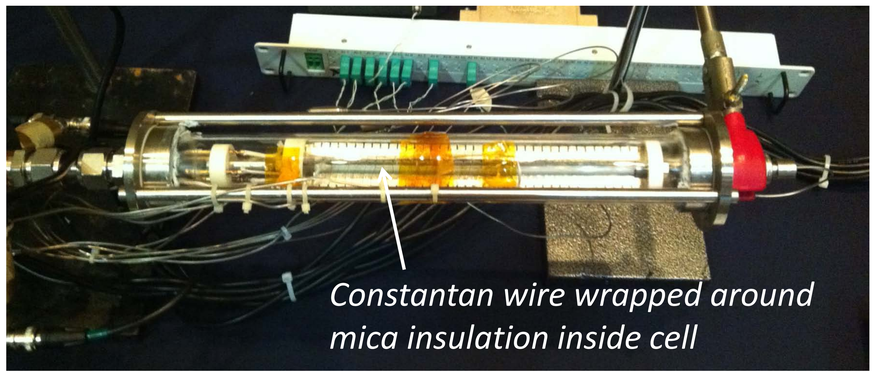
- NI Week: Excess heat[1] ~14 W (CoP ~1.2)
- ICCF-17: Excess heat[1] ~6 W (CoP ~1.1)
- Considerable interest expressed in LENR Community

Overview of Demonstration

- Treated Constantan (Cu-Ni alloy) wire
- Hydrogen (protium, deuterium) gas
- Dissipation calorimeter (Stefan-Boltzmann Law)
- Borosilicate glass, with wire wrapped around mica insulation
- ~57 W input power[1]

[1]Input power corrected ~15% after demos

Celani Reactor/Calorimeter, ICCF-17, August 2012



Important Parameters

- Excess heat
- Electrical resistance reduction (hydrogen loading)
- Treated wire properties (material properties, elemental composition)
- Supplemental: radiation, transmutation

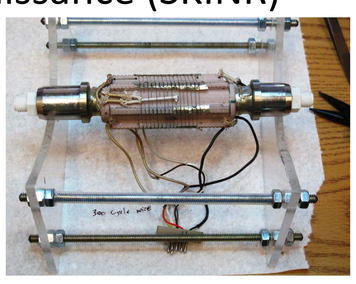
Celani Provided Samples to Investigators for Verification

Objectives of NI-UT Initiative

- Document Celani wire experiments for verification
- Identify lessons learned and best practices

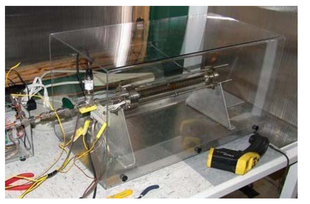
Six Entities Investigating Celani Constantan Wires

1. Sidney Kimmel Institute for Nuclear Renaissance (SKINR)
   - Excess heat not observed
   - Resistance reduction possibly observed
   - Celani-type layering not observed
   - ***Probable non-verification***



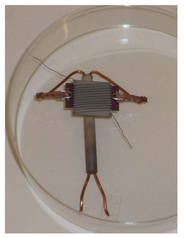
SKINR cell core with internal flow for calorimeter

2. Martin Fleischmann Memorial Project
   - Excess heat possibly observed
   - Resistance reduction observed
   - Wire layering observed
   - ***Probable verification***



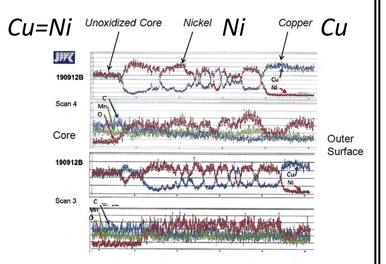
MFMP cell #1 for Celani replication

3. Ubaldo Mastromatteo
   - Excess heat observed
   - Resistance reduction observed
   - Wire layering observed
   - ***Verification***



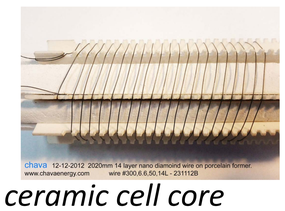
Ubaldo cell with adjacent ceramic heater

4. Larry Forsley
   - Excess heat not observed
   - Resistance reduction possibly observed
   - Celani-type layering not observed
   - ***Probable non-verification***



Forsley analysis of layers' composition

5. Chava Energy
   - Excess heat not observed
   - Resistance reduction observed; not attributed to H_2 loading
   - Celani-type layering not observed
   - ***Probable non-verification***



Chava ceramic cell core with wound wire

6. Idrocell (Reactor Cell under Construction)

Summary of Verification Results

	SKINR	MFMP	Ubaldo	Forsley	Chava	Idrocell
Excess Heat	N	P	Y	N	N	NA
Resistance Reduction	P	Y	Y	P	P	NA
Wire Properties	N	Y	Y	N	N	NA
Overall Verification	Pn	Pv	Y	Pn	Pn	NA

Y=Yes, N=No, P=Possible, Pv=Probable Verification, Pn=Prob Non-Verification

Lessons Learned/Best Practices

- LENR not as robust as indicated in demonstrations
- Experiments begin with replication, then proceed to reproducing effect
- Dissipation-type calorimeter needs verification (e.g., mass flow)
- Reactor calibration required with each experimental setup
- Resistance reduction may be influenced by factors besides H loading
- Metallurgy of treated Constantan more complicated than thought
- Proper temperature profile essential for accurate calorimetry
- Lack of verification in this survey does not negate possibility of LENR