Data from Melvin Miles' July 2016 experiment

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Links to spreadsheet

This document describes a spreadsheet provided by Melvin Miles with data from an experiment he performed in July 2016. Click on this link to download the spreadsheet:

http://lenr-canr.org/Collections/MilesJuly2016data.xlsx

The equipment is described in two documents by Miles, both available in this library. They are linked in the text below.

Introduction by Rick Cantwell

Dr. Mel Miles ran an experiment at his home in Ridgecrest, CA in July of 2016. Details of this experiment were presented at ICCF-20 and SSICCF20. Some details of the Ridgecrest experiment are contained in the ICCF20 Satellite Session slide presentation "The Fleischmann-Pons Calorimetric Methods And Equations." [1]

Dr. Miles provided Coolescence with copies of his lab notebook, pages 85-94, which contained measurement values that were transcribed into an Excel spreadsheet at Coolescence. With Mel's permission, we have made the spreadsheet available on the LENR-CANR site.

Data Set Details

The time series data set contains five measured temperatures, bath set point, cell voltage, cell current and room temp. The five measured temperatures are measured with thermistors and are assigned as follows:

T1 - Room1 (offset value = 7.65K)
T2 - Cell1 (offset value = -0.25K) Miles considers T2 to be the “good” cell temp value.
T3 - Bath Temp (offset value = 0)
T4 - Room2 (offset value = -0.12K)
T5 - Cell2 (offset value = -0.11K) Mel considers T5 to be the result of a defective sensor. T5 is not used in his calculations.

Cell current was recorded from the galvanostat. Cell voltage measured with DVM. We have no details on how room temp was measured.

Notes from Melvin Miles

The calorimeter and cell used in this study are described in detail in my ICCF-15 (Rome, Italy) Proceedings publication and includes a 0.1 M KNO_3 control study. [2] The loss of D_2O due to electrolysis should be considered (0.812 mL/day at a cell current of 0.1000 A). The cell constant changes by 0.0002 W/K per mL change in D_2O based on previous similar studies. The JM Pd wire cathode used was 0.1 x 2.3 cm, and this same palladium source previously gave excess power in experiments both at China Lake and at NHE in Japan using different calorimeters.

This recent study used a “lithium-free” 0.10 M KNO_3 + D_2O electrolyte (50 mL initially). The thermistors were attached to the outside surface of the cell immersed in 35 mL of Mobile-1 oil as a heat transfer fluid. The T2 thermistor gave the cell temperature measurement, and the T3 thermistor gave the bath temperature. The other thermistor used (T5) was not always reliable. Post experimental thermistor tests showed that T2 and T3 gave accurate results while T5 was somewhat erratic.

Photograph of equipment

This photograph of the equipment was included in the ICCF20 Satellite Session slides linked above, and published in Chemical & Engineering News. [3]

Figure 1. Photo of equipment published in Chemical & Engineering News. Courtesy of Melvin Miles

The caption in Chemical & Engineering news was:

"In July, Miles used his kitchen as lab space to run an experiment similar to the original Fleischmann-Pons experiment. In the setup shown, which includes a palladium wire cathode in deuterated water and potassium nitrate solution nested inside a homemade copper calorimeter, all sitting in a constant-temperature water bath (Walmart-purchased aquarium at left), Miles observed excess heat generated that is associated with deuterium fusion. Photo Credit: Courtesy of Melvin Miles"

References

1. Miles, M. *The Fleischmann-Pons Calorimetric Methods And Equations (PowerPoint slides)*. in *Satellite Symposium of the 20th International Conference on Condensed Matter Nuclear Science*. 2016. Xiamen, China.
2. Miles, M. and M. Fleischmann. *New approaches to isoperibolic calorimetry*. in *15th International Conference on Condensed Matter Nuclear Science*. 2009. Rome, Italy: ENEA.
3. Ritter, S.K., *Cold fusion died 25 years ago, but the research lives on*, in *C&EN*. 2016. p. 34-39.