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Comparison of Calorimetry: MIT and Fleischmann-Pons Systems MELVIN H. MILES, University of La Verne, La Verne, CA 91750, PETER HAGELSTEIN, Massachusetts Institute of Technology — The history of cold fusion shows that the MIT heat conduction calorimetry in 1990 reported a sensitivity of 40 mW while the Fleischmann-Pons Dewar calorimetry achieved a sensitivity of 0.1 mW. Additional information about the MIT calorimetry allows a more detailed analysis. The major finding is that the MIT calorimetric cell was so well insulated with glass wool (2.5 cm in thickness) that the major heat transport pathway was out of the cell top rather than from the cell into the constant temperature water bath. It can be shown for the MIT calorimeter that 58% of the heat transport was through the cell top and 42% was from the cell into the water bath. Analysis of the Fleischmann-Pons Dewar cell shows that under conditions similar to the MIT experiments, almost all of the heat flow would be from the Dewar calorimetric cell to the constant temperature water bath. Furthermore, the sensitivity of the Fleischmann-Pons temperature measurements was 0.001 K versus 0.1 K for the MIT calorimetric cell. Evaluations of the calorimetric equations and data analysis methods leads to the conclusion that the Fleischmann-Pons calorimetry was far superior to that of MIT.

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