Reply to "An Assessment of Claims of Excess Heat in Cold Fusion Calorimetry"

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1. My journal publications criticized by Jones and Hansen report only experimental results; hence, theoretical arguments are not germane to this debate. In science, theory guides but experiments decide. Nevertheless, several theories exist for cold fusion that fit nicely with my experimental results.[1,2] I cannot find any experimental errors that explain our radiation and helium-4 measurements.

2. The rate of stirring was carefully considered as a possible error source in our calorimetric experiments. We found that stirring was not a significant error source at currents greater than 100 mA (see Figures 3 and 4 in *J. Phys. Chem.* **1994**, *98*, 1948−1952). Our calorimetric experiments generally used currents of 400−600 mA. We always employed long, narrow calorimetric cells that provide rapid radial and axial mixing of the electrolyte by the electrolysis gas bubbles. In our calorimetric cell designs, the temperatures were measured in an integrating liquid or solid phase surrounding the electrochemical cell. The new experiments reported by Shelton, Hansen, Thorne, and Jones[3] are not applicable to our results since their cell temperatures are measured directly in the electrolyte. Stirring will be inadequate if short, fat calorimetric cells are used as shown in the Figure 1 schematic by Jones et al.[3] F. G. Will[4] reports that the experimental results of Jones et al.[5] on faradaic efficiencies less than 100% (recombination) were obtained at small current densities (0.5−4 mA/cm^2) and that the extrapolation of these findings to the much larger current densities generally employed in cold fusion studies has led Jones et al. to incorrect conclusions. Therefore, $H_2(D_2) + O_2$ recombination must be ruled out as an explanation for excess heat.[4]

References and Notes

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