LETTER TO THE EDITOR

ADDITION TO "A REVIEW OF THE INVESTIGATIONS OF THE FLEISCHMANN-PONS PHENOMENA"

Editor's Comments: *As the overview, "A Review of the Investigations of the Fleischmann-Pons Phenomena" by J. O'M. Bockris et al.,[1] was going to press, there were several news releases about problems with the tritium measurement at Texas A&M University. Consequently, I contacted Dr. Bockris to see if he wanted to make any changes in his overview article as a result of this event. His response appears in the letter below.*

Recently, Kevin Wolf at Texas A&M University analyzed 20 pieces of palladium from Hoover and Strong, and he claims to have found ~2000 dpm of tritium in 4 of them. There are three observations that reduce any fear that these statements would diminish the integrity of the work reported in Ref. 1:

1. Tritium has been found in 26 laboratories around the world as a result of the electrolysis of D_2O. Few, if any, of these use Hoover and Strong palladium; some used Johnson-Matthey palladium. The idea that tritium is inside the latter palladium is unacceptable.

2. The amounts analyzed by Wolf are on the border of detection. A total of 2000 dpm was measured from a specimen 0.5 cm long and 1 mm wide. There are those who consider that the analysis may contain errors. Furthermore, if the total amount in the sample obtained by Wolf were all to be dissolved, and assuming it to be multiplied by 10 to bring it up to the corresponding amount expected in an electrode, it would be 20 000 dpm.

3. It is difficult to understand the presence of tritium in Hoover and Strong palladium, which is made by dissolving a bunch of noble metals in acid and redepositing them by potentiostatic electrolysis, element by element. The difference in deposition potential between palladium (the more positive) and tritium is ~1 V. This represents a probability factor of $\sim 10^{-18}$ for the deposition of tritium at the palladium deposition potential. The palladium is later melted, and even if tritium were to remain in it (attached to a transition metal hydroxide), such compounds decompose below the melting point of palladium.

Finally, if tritium reappears in the palladium on cooling, it would not be associated with transition metal oxides and would rapidly dissipate, not remaining for a 1- to 2-month electrolysis.

Corresponding to this, Wolf did examine a sample of palladium in which he later detected tritium in a light water electrolyte, but he noted that it was produced.

In summary, the trace contamination claimed to have been found in a few samples does not affect our results (or those of Wolf). Nevertheless, it is always good to keep a check on palladium contamination, as of course we did at the beginning by sending our samples to Los Alamos National Laboratory for analysis.

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REFERENCE

1. J. O'M. BOCKRIS et al., "A Review of the Investigations of the Fleischmann-Pons Phenomena," *Fusion Technol.*, **18**, 11 (1990).