Erratum

Vacancy Formation Energy Measurements in Single Crystal Aluminum Using a Variable-Energy Positron Beam

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In the above paper, Fig. 2 and the analysis described in the text were in disagreement. The original positronium fraction vs. energy data were fit correctly with Eq. (5) where n was allowed to vary as shown in Fig. 3. Figure 2, in the paper, was the case where $n=1$ and not those values shown in Fig. 3 as was implied by (6). If one redoes the analysis with a constant value of $n=1.6$ we find the results shown in the figure

below. The vacancy formation energy of 0.83 eV and a high specific trapping rate, μ , is in disagreement with the accepted formation enthalpies measured in bulk Al by other techniques (0.6–0.7 eV) [1, 2]. If the value of n , as shown in Fig. 3 of the original manuscript, is used a formation energy $>.9 \text{ eV}$ is extracted. At the present time we do not completely understand this discrepancy. A more thorough explanation will be discussed in a later publication, however it should be emphasized that until this discrepancy is resolved the slow positron technique does not appear to provide reliable formation enthalpies.

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References

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