ELSEVIER

Journal of Alloys and Compounds 305 (2000) 318–319

Journal of ALLOYS AND COMPOUNDS

www.elsevier.com/locate/jallcom

Corrigendum

Corrigendum to 'SANS measurements of deuteride formation in single crystal Pd' [J. Alloys Comp. 292 (1999) 134–147]

Brent J. Heuser[a,*], John S. King[b], W.C. Chen[a]

[a]*University of Illinois, Department of Nuclear Engineering, Urbana, IL 61801, USA*
[b]*University of Michigan, Department of Nuclear Engineering, Ann Arbor, MI 48109, USA*

We report here an error in the crystallographic orientation of sample SC17 given in a previous publication [J. Alloys Comp. 292 (1999) 134]. Two high-symmetry directions, [001] and [110], contained in the Q plane of the SANS measurements of SC17 were inverted in Figs. 8 and 9 of this publication. Fig. 9 is reproduced below with the correct crystallographic orientation. This is the most important figure with regard to our error because it shows the orientation of the observed anisotropic Porod response relative to the high-symmetry directions in the sample Q plane. The large deuteride plates responsible for this Porod response, originally placed on the $(001)_\alpha$ habit plane, are

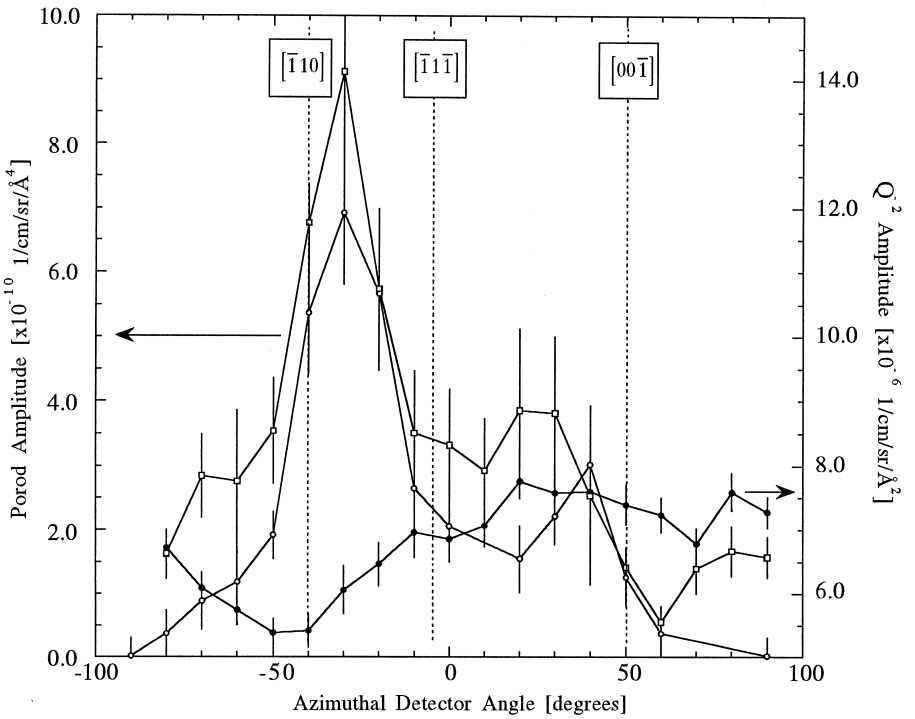

Fig. 9. Reproduction of Fig. 9 from Heuser et al. [J. Alloys Comp. 292 (1999) 134]. The correct high symmetry Pd lattice directions contained in the measured Q plane are identified by the dotted vertical lines. Q^{-2} (solid circles) and Q^{-4} (open circles) scattering amplitudes versus azimuthal detector angle for the 0.060 [D]/[Pd] deuterium fraction SANS measurement are shown. The Q^{-4} scattering amplitude (open boxes) for 0.097 [D]/[Pd] is shown as well.

*Corresponding author. Tel.: +1-217-333-22959610; fax: +1-217-333-2906.
E-mail address: bheuser@vivc.edu (B.J. Heuser)

0925-8388/00/$ – see front matter
PII: S0925-8388(00)00691-5

now seen to form on the $(\bar{1}10)_\alpha$ habit plane. We interpreted the original, incorrect habit plane as being consistent with formation of incoherent (or at least semi-coherent) plates normal to the elastically softest $[001]_\alpha$ direction. In this way, the system was thought to minimize the elastic strain energy associated with the volume mismatch between the incoherent deuteride phase and the host Pd lattice. We also found that the $(001)_\alpha$ habit plane was consistent with earlier TEM work of others [1,2]. The correct habit plane clearly invalidates our conclusions regarding the large deuteride plate habit plane. We suspect the $(110)_\alpha$ habit plane is the result of the large over-pressures used to drive the system into the miscibility gap. The balance of our analysis of the SANS data, as well as analysis of solubility and γ-ray diffraction data, is unaffected by this error.

References

[1] H.C. Jamieson, G.C. Weatherly, F.D. Manchester, J. Less-Common Metals 50 (1976) 85.
[2] E.T.C. Ho, H.A. Goldberg, G.C. Weatherly, F.D. Manchester, (in: Second International Congress on Hydrogen in Metals, 1977, pp. 1–8).