

Changes of resistance, work function and Fermi level during the hydriding of Zr and Sc at 295K

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Abstract

The turning points on the curve of resistance versus atomic ratio ($\gamma = \text{H/Me}$) were correlated with the phase boundaries of the H/Zr and H/Sc systems at 295K. The changes of work function with r showed that, at low value of r , some H atoms adsorbed on the surface and increased the work function slightly for Zr but decreased it for Sc. They also showed that for H/Zr the Fermi level μ of the FCC hydride was 0.2 eV higher than μ of the FCT hydride and at least 0.07 eV higher than μ of the clean metal. However, μ for Sc was about 0.2 eV higher than μ of its (FCC) hydride.

Indexed keywords

Engineering controlled terms: SCANDIUM AND ALLOYS - Electric Properties

Engineering uncontrolled terms: FERMI LEVEL; HYDRIDING; WORK FUNCTION

Engineering main heading: ZIRCONIUM AND ALLOYS