



Oxidation of Palladium-Chromium Alloys for High Temperature Applications (Paperback)

By Nancy D Pilch

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.An alloy consisting of Pd with 13 wt Cr is a promising material for high temperature applications. High temperature performance is degraded by the oxidation of the material, which is more severe in the fine wires and thin films used for sensor applications than in the bulk. The present study was undertaken to improve our understanding of the physical and chemical changes occurring at these temperatures and to identify approaches to limit oxidation of the alloy. The alloy was studied in both ribbon and wire forms. Ribbon samples were chosen to examine the role of grain boundaries in the oxidation process because of the convenience of handling for the oxidation studies. Wire samples 25 microns in diameter which are used in resistance strain gages were studied to correlate chemical properties with observed electrical, physical, and structural properties. Overcoating the material with a metallic Cr film did prevent the segregation of Pd to the surface; however, it did not eliminate the oxidation of the alloy.



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