

# Platinum and palladium-hydrogen

Lewis, F.A.<sup>a</sup>, Kandasamy, K.<sup>c</sup> and Tong, X.Q.<sup>b</sup>

<sup>a</sup> School of Chemistry, Queen's University, Belfast BT9 5AG, United Kingdom

<sup>b</sup> Department of Materials Science, Tsinghua University, Beijing, China

## Abstract

Platinum and palladium-hydrogen was discussed. Comparison between these two was presented in terms of physical properties, structural characteristics and estimation solubilities. Measurement techniques used to determine diffusion coefficient of hydrogen in platinum and palladium were also listed. Studies revealed formation of hydrogen blisters in platinum and platinum-palladium alloys due to the high pressure of gaseous hydrogen within the voids. Time dependent incremental changes of hydrogen gas pressure in palladium-platinum alloys was also observed during initial removal of hydrogen from the alloy surface.

## Indexed keywords

**Engineering controlled terms:** Absorption; Composition effects; Correlation methods; Current density; Diffusion in solids; Electrodes; Hydraulic conductivity; Hydrogen; Phase equilibria

**Engineering uncontrolled terms:** Blisters; Diffusion elasticity

**Engineering main heading:** Palladium alloys