

(0001) and  $(1\bar{1}24)$  faces differs by 7 to 8 times, and from ruthenium faces (0001) and  $(1\bar{1}20)$ , by 3 to 4 times. The process of oxygen desorption from an osmium surface is slower than from a ruthenium surface.

The investigations carried out on the purification and production of platinum group metal single crystals, the analysis of their

structure at macro- and microscopic levels, and their interactions with metallic and non-metallic impurity inclusions have provided a physico-chemical basis for the brittleness of refractory platinum group metals, and allowed us to determine some fundamental physical and chemical properties and to evaluate their anisotropy.

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## Energy Storage System Uses Palladium Catalyst

The difficulty of providing sufficient electricity where and when it is required, and the wish to conserve the power that is available at times when it is not needed, has motivated many attempts to find additional methods of storing energy.

A new method of hydrogen storage proposed by Richard Williams, Richard S. Crandall and Allen Bloom of the R.C.A. Laboratories, Princeton, New Jersey, has recently been reported (*Appl. Phys. Lett.*, 1978, **33**, (5), 381-383). They describe a series of reactions which starts with the use

of surplus electricity for the electrochemical reduction of carbon dioxide in water to form formic acid in aqueous solution. This is easily stored and transported and may be used as a fuel, either by combustion or in a fuel cell. Alternatively when energy is required the formic acid may be catalytically decomposed using a standard palladium on carbon hydrogenation catalyst to give carbon dioxide and hydrogen.

While the process is clearly at an early stage of development the authors are encouraged by the efficiency they are obtaining.