On the Oxidation of Palladium

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Palladium/zirconium alloys have frequently been used to produce nanoparticles with composite Pd/ZrO2 structures with crystallite length scales on the order of 10 nm. In the synthesis of these materials, the role of oxidation is critical. Here we review present knowledge found in literature on the conditions necessary for the oxidation of palladium via a diverse range of experiments.This is combined with recent thermogravimetric and x-ray diffraction experiments. Models for the oxidation of palladium are presented and this is then contextualized in terms of the formation of PdO/ZrO2 from PdZr starting alloys.