

Developing our Hydrogen Technology, Design and Construction of a Sieverts Type Equipment for Hydrogen Sorption/ Desorption Characterization.

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ABSTRACT

A Sieverts type equipment was designed and constructed to determine the hydrogen uptake in hydrogen-storage materials. This equipment can operate up to 600°C and 100 bar hydrogen pressure. The equipment was constructed in stainless steel 316L and is capable of recording pressure-temperature data set each second. The parameters pressure, temperature, volume and compressibility factor are correlated by real gases function state equations to give the gain or loss of hydrogen in a storage material. Detailed calibration and validation was performed using high purity hydrogen and nanometric Pd and Mg as reference materials.

Keywords: hydrogen storage, Sieverts equipment, hydrogen technology.

