Hydrogen Storage Behaviors of Porous Carbons

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Abstract : In this work, Porous Carbons (PCs) were prepared by using a chemical acid treatment, and the hydrogen storage behaviors of PCs doped by Pt nanoparticles were investigated. The hydrogen storage capacities of the Pt-doped carbons with a platinum content of 0.2 - 1.5 wt.% were evaluated by a volumetric adsorption method at 298K and 10 MPa. The microstructures of samples were examined by XRD and SEM. It was found that the hydrogen storage capacitiesof the PCs dramatically increased, but the amount of hydrogen stored from the samples began to decrease after 0.6 wt.% of Pt content due to the pore blocking. These results indicate that a suitable amount of supported catalysts and layer intervals of carbons had a very important impact on hydrogen storage behaviors.

Key words : Hydrogen storage(수소저장), Porous carbons(다공성 흑연)