

Measurement of Hydrogen capacity in nano-materials

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Hydrogen energy is focused on the most feasible energy of future due to emission-free pollutants, high efficiency and infinitive reserves. But the problem of storing hydrogen is the chief obstacles to practical use of hydrogen. Recently Nanotubes such as carbon nanotube and boron nitride nanotube are a great debate on hydrogen storage issue and research on this field is a very up to date topic. And Anybody can not have shown the reliable amount of the hydrogen stored in materials. Our search focuses on ensuring a hydrogen measurement system and measurement of the amount of hydrogen using nanotube-structured materials. Volumetric adsorption/Desorption apparatus (Sieverts' apparatus from Hy-energy LLC) was used increasing pressure up to 30 bar step by step at constant temperature (RT). As nanomatials for hydrogen storage, we have used Li inserted Postech Alumina Nanotube (Li-PANT) and Carbon Nanotube (CNT). We synthesized Li-PANT by adding controlled amount of water in the mixture of Aluminum tri-sec butoxide as alumina precursor, Cetyltrimethylammonium bromide (CTMABr) as structure template and LiOH in-situ . CNT was commercial synthesized by Ijin-nanotech.