

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**In-situ electronic structure study of H<sub>2</sub> adsorption on HOPG**

PER-ANDERS GLANS, JINGHUA GUO, ALS, Lawrence Berkely National Laboratory — The storage of hydrogen in a both safe and compact manner is of great importance for, for example, hydrogen powered vehicles. Interesting candidates for dense storage of hydrogen are different types of carbon based nanomaterials: single (SWCNT) and multi-walled carbon nanotubes, C<sub>60</sub> and C<sub>70</sub>. Various groups have reported different amounts of hydrogen stored using SWCNTs. Highly ordered pyrolytic graphite (HOPG) has similarities with the carbon systems mentioned above. Photon-in, photon-out techniques are well suited for measurements of the electronic structure of these materials under ambient hydrogen pressure. X-ray absorption (XAS) and emission spectroscopy (XES) measurements have been performed on HOPG under different hydrogen pressures. The measured partial density of states of this system will be presented.

Per-Anders Glans  
ALS, Lawrence Berkely National Laboratory

Date submitted: 22 Nov 2006

Electronic form version 1.4