

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Sorption and condensation of Neon in MCM48 as monitored by X-ray diffraction.** PAUL SOKOL, DUNCAN KILBURN, Indiana University Cyclotron Facility — In this submission we report on experiments that simultaneously measure adsorption isotherms and X-ray diffraction measurements on Neon in the mesoporous silica glass MCM 48. The isotherms are similar to those reported previously in the literature. Simultaneous X-ray measurements allow the variation of adsorbate structure to be monitored as the sorption progresses. We observe that the most rapid increase in the intensity of the first peak in the scattered spectrum occurs during the initial sorption of Neon layers, but before capillary condensation. We show that this can be explained via conventional scattering theory and that it provides a new perspective on the processes of monatomic gas sorption. We also report on modified phase transitions and structures for the confined Neon.

Paul Sokol  
Indiana University Cyclotron Facility

Date submitted: 20 Nov 2006

Electronic form version 1.4