

Abstract Submitted
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Adsorption of Xenon on Hipco Single Walled Carbon Nanotubes DINESH RAWAT, LUKE HEROUX, VAIVA KRUNGLEVICIUTE, ALDO MIGONE, Department of Physics, Southern Illinois University at Carbondale — We have measured the adsorption of Xenon on purified HiPco SWCNTs for coverages in the first layer. We wanted to compare the results on this substrate to those we had obtained on lower purity arc-discharge produced nanotubes. In order to obtain an estimate for the binding energy. We measured six low-coverage isotherms for temperatures between 220K and 260K. We determined a value of 272 meV for the binding energy; this value is lower, by about 4% than the value we had reported on arc discharge nanotubes¹. It is 1.67 times greater than the value for this quantity on planar graphite. We have measured five full isotherms at 150K, 155K, 160K, 165K, and 175K and have used these data to obtain the coverage dependence of the isosteric heat. The experimental values will be compared with computer simulation results for this quantity that have been conducted using different models for bundles². 1 A. J. Zambano, S. Talapatra, and A. D. Migone Physics Review B, 64, 2001. 2 Wei Shi, and J. Karl Johnson Physical Review Letters 91, 2003. * The present study was supported by the National Science Foundation through Grant # DMR-0089713

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