Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Phases of Ethane Adsorbed on Purified HiPco Single Walled CarbonNanotubes. DINESH RAWAT, ALDO MIGONE, Department of Physics, Southern Illinois University — We have measured adsorption isotherms of ethane on purified HiPco SWNTs for coverages in the first layer. We wanted to investigate the existence of different phases for ethane as a function of coverage on this substrate, and to compare the results to those on planar graphite. We measured isotherms at 103, 110,150, 160, and 165K. We used the low-coverage isotherm data to obtain an estimate for the binding energy of ethane on the SWNTs; we found a value of 363 meV for this quantity. This binding energy value is 1.81 times greater than the corresponding one for this quantity on planar graphite. We have also determined the coverage dependence of isosteric heat of adsorption for ethane using the results for isotherms obtained at above-mentioned temperatures.
This work was supported through a grant from NSF, DMR#0089713, and by the Materials Technology Center of SIUC.

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Date submitted: 29 Nov 2005 Electronic form version 1.4