

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Adsorption of neon and tetrafluoromethane on carbon nanohorn aggregates: differences in specific surface area values VAIVA KRUNGLEVICIUTE, Southern Illinois University Carbondale, MASAKO YUDASAKA, SUMIO IJIMA, Japan Science and Technology Corporation, c/o NEC Corporation, ALDO MIGONE, Southern Illinois University Carbondale — We have measured adsorption isotherms for two different adsorbates, neon and tetrafluoromethane, on dahlia-like carbon nanohorn aggregates. The experiments were performed at similar relative temperatures for both gases. The measurements were conducted to explore the effect of adsorbate diameter on the behavior of the resulting adsorbed systems. We measured the effective specific surface area value of the nanohorn sample using both gases, and we found that this quantity was about 22% smaller when we determined this quantity using tetrafluoromethane, the larger molecule. Isothermic heat and binding energy values were also determined from our measurements. We will compare our experimental results with those from a computer simulation study performed by Prof. M. Calbi. The simulations help us understand the source of the observed differences in the measured specific surface values, as well as the coverage dependence of the isothermic heat of adsorption for both gases.

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Date submitted: 16 Nov 2007

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