Abstract Submitted
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Ethane adsorbed on carbon nanohorns BRICE RUSSELL, ALDO MIGONE, Department of Physics Southern Illinois University, Carbondale IL 62901, MASAKO YUDASAKA, SUMIO IIJIMA, Japan Science and Technology Corp., NEC Corporation, Tsukuba 305-8501, Japan — We have measured adsorption isotherms for ethane adsorbed on as-produced single-walled carbon nanohorns. Measurements have been completed for five temperatures between 130 K and 195 K. The kinetics of adsorption will be compared to results previously obtained for ethane adsorption on purified HiPco single-walled carbon nanotubes. On nanotubes it was found that equilibration time for ethane decreased with increasing sorbent coverage; for adsorption on nanohorns, equilibration time increased with increasing sorbent coverage. The kinetic results for the fractional pressure change and sorbent mass loading were calculated under the assumption that the system was only subject to one rate-controlling mechanism. The point-B method was used to determine monolayer completion values at each temperature. Equilibrium results for ethane adsorbed on nanohorns will be compared to similar results on nanotubes. This work was supported by the NSF through grant DMR-1006428.

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