

Abstract Submitted
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Carbon dioxide adsorption on H₂O₂ treated single-walled carbon nanohorns¹ ALDO MIGONE, VAIVA KRUNGLEVICIUTE, SHREE BANJARA, Department of Physics, Southern Illinois University Carbondale, MASAKO YUDASAKA, SUMIO IIJIMA, National Institute of Advanced Industrial Science and Technology, Japan — Carbon nanohorns are closed single-wall structures with a hollow interior. Unlike SWNTs, which assemble into cylindrical bundles, nanohorns form spherical aggregates. In our experiments we used dahlia-like carbon nanohorn aggregates. Our sample underwent treatment with H₂O₂ which opened access to the interior spaces of the individual nanohorns. We measured carbon dioxide adsorption at several temperatures between 167 and 195 K. We calculated the isosteric heat as a function of loading, and the binding energy values for CO₂ on the nanohorn aggregates from the isotherm data. Results on the H₂O₂-treated nanohorns will be compared with those obtained on other carbon substrates. We have also determined detailed equilibration profiles for CO₂ adsorption on the nanohorn aggregates; these results will also be presented.

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