

Abstract Submitted
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Argon Adsorption on Open Carbon Nanohorns¹ BRICE RUSSELL, Southern Illinois University Carbondale, ANGEL CALVILLO, None, PRAVIN KHANAL, ALDO MIGONE, Southern Illinois University Carbondale, SUMIO IIJIMA, MASAKO YUDASAKA, National Institute of Advanced Industrial Science and Technology — We have measured adsorption isotherms for argon adsorbed on a 0.1692 g sample of chemically-opened carbon nanohorns. Two clear substeps are visible in the adsorption data, corresponding to groups of stronger binding sites (lower pressure substep) and weaker binding sites (higher pressure substep). We have measured adsorption at eight different temperatures in the range between approximately 70 and 110 K. The space at the interior of the individual nanohorns is accessible to sorbates in these chemically opened nanohorns. Consequently, higher loadings are obtained on these samples when compared to those measured on unopened (as-produced) nanohorns. Results for the kinetics of adsorption, the effective specific surface area, and the isosteric heat of adsorption as a function of sorbent loading will be presented and compared to results from other gases adsorbed on nanohorns.

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