

Abstract Submitted  
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**CF<sub>4</sub> Adsorption on Open Carbon Nanohorns**<sup>1</sup> PRAVIN KHANAL, BRICE RUSSELL, ALDO MIGONE, Southern Illinois University Carbondale, SUMIO IIJIMA, MASAKO YUDASAKA, National Institute of Advanced Industrial Science and Technology — We have measured adsorption isotherms at ten different temperatures between 90.4 K and 163.8 K for CF<sub>4</sub> on a sample of chemically-opened carbon nanohorns. The interior of the individual nanohorns is accessible to sorbates in these chemically-opened nanohorns. Two substeps are visible in the adsorption data, one corresponding to groups of stronger binding sites (lower pressure substep) and another corresponding to weaker binding sites (higher pressure substep). The stronger binding sites are interstitial pore-like spaces within the nanohorn aggregates and intra-nanohorns pores while the weaker binding sites are the outer surfaces of the individual and interior sites located away from the tips of the nanohorns. Results for the effective specific surface area, the kinetics of adsorption, and the isosteric heat of adsorption as a function of sorbent loading will be presented and compared to adsorption results with other sorbates on open carbon nanohorns.

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