Abstract Submitted
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Short Perfluoroalkane adsorption on MgO (100) and graphite NATHANIEL BASS, JOHN Z. LARESE, University of Tennessee, Knoxville — There has been recent interest in the adsorption properties of C_2X_6 and C_3X_8 (X=H,F) adsorbates on graphite [1], silica [2] and Mo (100) [3] surfaces. In particular, Bruch has examined the lattice structure for the monolayer solid, as well as, the area per molecule for each adsorbate on the basal plane of graphite [1]. We will present the result of our thermodynamic efforts to quantify these parameters experimentally on the graphite basal plane. Furthermore, we extend our thermodynamic investigation to the adsorption of these fluoroalkanes to the (100) MgO surface. We report on the thermodynamic properties for both systems including enthalpy, entropy, and isosteric heat of adsorption as calculated using an extensive set of volumetric adsorption isotherms. The wetting properties and a phase diagram for a representative C_NF_{2N+2} layered system will also be presented. [1] L. W. Bruch, J. Phys. Chem. C 113, 17399 (2009). [2] G. M. Leuty, A. Abu-Nada, and M. Tsige, J. Phys. Chem. C 116, 14514 (2012). [3] G. M. Leuty and M. Tsige, J. Phys. Chem. B 115, 12694 (2011).

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