

Abstract Submitted  
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**Two-dimensional phase of gases physisorbed on a graphene** HYE-YOUNG KIM, Department of Chemistry and Physics, Southeastern Louisiana University, LOUIS BRUCH, Department of Physics, University of Wisconsin-Madison, MILTON COLE, Department of Physics, Pennsylvania State University — The phases of gases physically adsorbed on a suspended, free-standing graphene are explored. In particular, three kinds of phase transitions are examined: (1) The quasi-two-dimensional condensation of a van der Waals fluid, (2) Contribution of the substrate-mediated interaction energy to the ground state energy of monolayer solid and liquid phases of He on graphene, and (3) Wetting transition of water and other fluids on graphene. In each case, the difference from those for adsorption on graphite will be presented.

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