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Molecular oxygen adsorption on the metal-organic framework ZIF-8 ALDO MIGONE, BRICE RUSSELL, CARL ZIEGLER, Department of Physics Southern Illinois University, Carbondale IL 62901 — We have measured adsorption isotherms for molecular oxygen on a 0.1893 g sample of the metal-organic framework material ZIF-8. Isotherms were measured at three temperatures between 60 and 90 K (above oxygen's bulk triple point). ZIF-8 has been reported to undergo a structural transition as a function of the amount of gas sorbed in it. This structural transition produces a substep in the adsorption isotherm data (more gas can adsorb after the transformation). We have followed this substep as a function of temperature. Our results suggest that there is an upper limit for the temperature at which the structural transformation in ZIF-8 can occur as a result of the adsorption of molecular oxygen.

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