

ZIF-8 synthesis and characterization for selective carbon dioxide adsorption

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Zeolitic imidazolate frameworks (ZIFs) have attracted considerable attention recently due to their novel adsorption properties. Surface areas of ZIFs are, in general, smaller than MOFs but the former are more stable in water. ZIF-8 has a cage system that has a suitable aperture size to separate carbon dioxide and nitrogen. In this work, ZIF-8 was prepared by solvothermal method using zinc nitrate hexahydrate and 2-methylimidazole in DMF. ZIF-8 synthesized was characterized by X-ray diffraction, SEM, and BET surface area measurements. Carbon dioxide and nitrogen adsorption isotherms were obtained at 273 and 298 K to calculate the heat of adsorption.