

Uptake of Carbon Dioxide on Polyethyleneimine-Modified MCM-41 at (343.15, 353.15, 363.15 and 373.15) K

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Polyethyleneimine (PEI) modified mesoporous silicate MCM-41 (MCM-41-PEI) was prepared by a wet impregnation method for the adsorption of CO₂. The samples were characterized by X-ray powder diffraction (XRD), transmission electron microscopy (TEM), and nitrogen adsorption /desorption isotherms. It was found that the PEI was uniformly dispersed into the channels of the molecular sieve MCM-41. The adsorption uptake was measured at (343.15, 353.15, 363.15 and 373.15) K using thermogravimetric analysis. The adsorption capacity of MCM-41-PEI was significantly greater than that of MCM-41.