

Adsorption of CO₂ and Dimethyl ether on Nanostructured Materials

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Adsorption equilibrium of CO₂ and dimethyl ether on nanostructured materials were obtained by static volumetric method in the pressure range of 0 to 30 bar at 293.15, 303.15, and 313.15 K. Langmuir isotherm, Langmuir Freundlich isotherm and dual-site Langmuir isotherm were used to fit the adsorption equilibrium data of CO₂ and dimethyl ether on carbonized *Kapok* adsorbent prepared from natural fiber. In addition, lithium-exchanged X type zeolite was used for comparison. It was found that carbonized *Kapok* has high adsorption capacity of CO₂ and dimethyl ether.