Membrane Separation for Gases: Materials, Preparation Methods and Transport Mechanism

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***Abstract*—Gas adsorption and permeation of CO2 gas were measured on two carbon molecular sieve membranes over a wide pressure range. The two membrane samples were fabricated under similar conditions but with different degrees of carbonization. The pressure dependence of the permeation time lag was investigated and it is found that the diffusion coefficient takes a stronger functional dependence on loading than the Darken relation and this dependence increases with the degree of carbonization.**

***Keywords*— Diffusion, permeation, adsorption, carbon molecular sieve membrane; gas separation**

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