2° Simposio sobre Adsorción Adsorbentes y sus Aplicaciones

GAS SOLUBILITY IN MICROPOROUS POLYMERS

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RESUMEN

Polymers with intrinsic microporosity constitute promising materials for the production of gas selective membranes. They feature porosity derived from inefficient packing due to a combination of rigid segments and sites of contortion (stiff units with spiro-center) within the macromolecular backbone of the polymer [1]. *In this work, new blend membranes of polymers with intrinsic microporosity (PIM-A and PIM-B) and polyetherimide (PEI, ULTEM 1000) were prepared for H_2 separation applications. All membranes were characterized through N_2 and CO_2 adsorption experiments and gas permeability assays (H_2, N_2, O_2, CH_4, CO_2)* [2]. *PIM-B showed higher surface area (BET method) than PIM-A. High solubility coefficients (S) derived from permeability measurements improved the H_2 selectivity of blend membranes. This result was linked to the preferential sorption of certain gases such as CO_2 in PIM-A and PIM-B* [3].

Palabras clave: microporosity, polymer blends, solution-diffusion model, gas permeability

Referencias

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