DEHUMIDIFICATION OF AIR BY THE HYDROPHILIC COMPOSITE MEMBRANE USING HYDROPHILIC POLYMER ON INORGANIC SUBSTRATE

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ABSTRACT

A membrane permeable to water vapor was prepared and used for dehumidification of air. At a given feed flow rate, the permeation ratios were almost independent to relative humidities of feed stream; The permeation ratios were about 45%, 60%, and 25% at feed flow rate of 50, 70, and 90cc/min, respectively. Permeation ratio might also increase with increasing feed flow rate. However, the permeation ratio (about 25%) at a feed flow rate of 90cc/min was much less than at 50cc/min (about 45%) and 70cc/min (about 60%). This phenomenon might be explained that a water film does form at surface of membrane because the amount of water vapor contained in feed stream of 90cc/min was much more than the permeate through the membrane.

Keywords: hydrophilic, dehumidification, air, water vapor, membrane

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