



Review

Current challenges in membrane separation of CO₂ from natural gas: A review

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ABSTRACT

In recent year, the need for more energy efficient and environmental friendly gas purification techniques has lead to massive research efforts into membrane based gas separation technology. Today, this technology is widely used in removal of CO₂ from raw natural gas components. Penetrant-induced plasticization, physical aging, conditioning and poor balance between permeability and selectivity are some of the major challenges facing the expansion of membrane market in industrial application. A comprehensive review of research efforts in alleviating these problems is required to capture details of the progresses that have already been achieved in developing membrane materials with better CO₂ separation performance.

This paper presents details of recent research progresses that have been recorded in the context of breakthrough and challenges in development of membrane materials. Descriptions of membrane preparation methods that have been investigated to develop membranes with better gas separation performance are discussed.

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