

Nitrogen Removal from Saudi Natural Gas Using Membrane Technology

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The use of membranes for nitrogen removal from the natural gas has been considered in recent years. Several new membrane materials, which are now commercially available, are seriously being considered for the separation of nitrogen both effectively and efficiently from the natural gas. The membrane-based separation could reduce both the capital and operating costs compared to the conventional cryogenic process.

The conventional cryogenic system for nitrogen removal is energy intensive and capital expensive. On the contrary, membrane technology offers low capital cost, low energy consumption and ease of operation. In this study, the potential use of membrane technology for nitrogen removal was explored. The performance of membrane for nitrogen separation was investigated using different membrane materials and configurations. A comparison between the conventional cryogenic system and the new membrane-based separation process was investigated. The Saudi natural gas has been considered as a basis in this study.