World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:18, No:04, 2024

Growth and Development of Membranes in Gas Sequestration

Authors : Sreevalli Bokka

Abstract : The process of reducing the intensity of the carbon from a process or stream into the atmosphere is termed Decarbonization. Of the various technologies that are emerging to capture or reduce carbon intensity, membranes are emerging as a key player in separating carbon from a gas stream, such as industrial effluent air and others. Due to the advantage of high surface area and low flow resistance, fiber membranes are emerging widely for gas separation applications. A fiber membrane is a semipermeable barrier that is increasingly used for filtration and separation applications needing high packing density. A few of the many applications are in water desalination, medical applications, bioreactors, and gas separations applications. Only a few polymeric membranes were studied for fabricating fiber membranes such as cellulose acetate, Polysulfone, and Polyvinylidene fluoride. A few of the challenges of using fiber membranes are fouling and weak mechanical properties, leading to the breakage of membranes. In this work, the growth of fiber membranes and challenges for future developments in the filtration and gas separation applications are presented.

Keywords : membranes, filtration, separations, polymers, carbon capture
Conference Title : ICCCSTCCSE 2024 : International Conference on Carbon Capture, Storage Technologies and Carbon Capture and Storage Economics
Conference Location : New York, United States
Conference Dates : April 22-23, 2024