

Flexible Metal Organic Framework Membrane (MOF) For Gas Separation

INVENTION

This technology is a new MOF flexible membrane grown on carboxylates nano porous polymer which is used to separate H₂ and CO₂ from hydrocarbons. This method could be applied to grow continuous and flexible MOF membrane which has application is gas separation, storage, sensing, and catalysis.

The permeation characteristics of a range of gases including H₂, CO₂ and hydrocarbons were examined with the aid of a time lag statistics.

ADVANTAGES

- Proposed method overcomes defects known in preparing pure MOF membranes
- The membrane can be fabricated at different thicknesses

APPLICATIONS

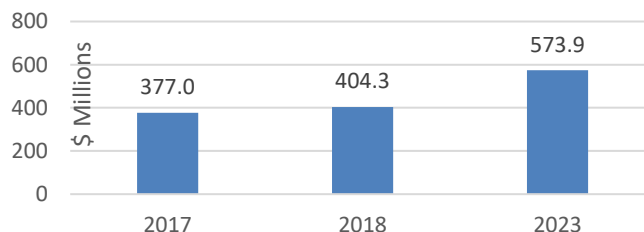
Major applications for gas separation membranes are:

production, separation, recovery, drying, and/or purification of oxygen, nitrogen, CO₂, hydrogen sulfide (H₂S), hydrogen, hydrocarbons, and water vapor

MARKET SIZE AND GROWTH

The Global Industrial Gas Market for Membrane separation production technology (\$ Billions):

2017	2018	2023	CAGR%
5.2	5.2	5.3	0.4



Source: BCC Research "U.S. Market for Membrane Products Used in Gas Separations, 2017–2023 (\$ Millions).

LOOKING FOR INDUSTRIAL PARTNER

KFUPM is seeking:

- market feedback from industry and/or
- collaboration partner for further development of this technology and/or
- licensing the technology to a company who is capable and interested to commercialize it.

PATENT PROTECTION

The invention is covered by a US non-provisional filed patent. The patent application covers design of flexible and continuous membrane with enhanced gas separation activity. The patent is owned by King Fahd University of Petroleum & Minerals (KFUPM).

ABOUT KFUPM

KFUPM is a leading educational institution for science and technology located in Saudi Arabia. The Innovation & Technology Transfer (ITT) office at KFUPM is tasked with taking innovation from lab to market place. For any inquiries regarding this technology, please get in touch with ITT executive below.

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