

Accepted Manuscript

Preparation and characterization of thin film composite membrane for the removal of water vapor from the flue gas at bench scale

Ook Choi, Pravin G. Ingole, Hyung-Keun Lee

PII: S1383-5866(18)32426-2
DOI: <https://doi.org/10.1016/j.seppur.2018.09.086>
Reference: SEPPUR 14984

To appear in: *Separation and Purification Technology*

Received Date: 14 July 2018
Revised Date: 28 September 2018
Accepted Date: 28 September 2018

Please cite this article as: O. Choi, P.G. Ingole, H-K. Lee, Preparation and characterization of thin film composite membrane for the removal of water vapor from the flue gas at bench scale, *Separation and Purification Technology* (2018), doi: <https://doi.org/10.1016/j.seppur.2018.09.086>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Preparation and characterization of thin film composite membrane for the removal of water vapor from the flue gas at bench scale

Ook Choi ^{a,b}, Pravin G. Ingole ^{c*}, Hyung-Keun Lee ^{a,*}

^a Korea Institute of Energy Research, 71-2 Jang-dong, Yuseong-gu, Daejeon, Korea

^b Department of Chemical and Biomolecular Engineering, Yonsei University, Korea

^c Chemical Engineering Group, Engineering Science and Technology Division, CSIR-North East Institute of Science and Technology, Jorhat, Assam 785006, India

*Corresponding author: Email address: ingolepravin@gmail.com (P. G. Ingole);
hklee@kier.re.kr (Hyung Keun Lee)

Tel.: +82-42-860-3493

Abstract

Water inadequacy is increasing day by day and researchers are developing several technology to fulfill the pure water demand. Currently membrane technology is coming in big way to save and recovered the water. Herewith we introduce the thin-film composite (TFC) hollow fiber membranes to recover water vapor from flue gas in industrial power plants and it has become a promising technology. TFC membranes were prepared by interfacial polymerization between the aqueous monomer of 3,5-diaminobenzoic acid (DABA) in various concentrations and the organic monomer of trimesoyl chloride (TMC) inner surface of a polysulfone (PSf) hollow fiber substrate. The selective polyamide layers of TFC membranes were comprehensively characterized by attenuated total reflectance Fourier transformed infrared spectroscopy (ATR-FTIR), field emission scanning electron microscopy (FE-SEM), atomic force microscopy (AFM) and water contact angle measurement (WCA).

Download English Version:

<https://daneshyari.com/en/article/11023752>

Download Persian Version:

<https://daneshyari.com/article/11023752>

[Daneshyari.com](https://daneshyari.com)