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Derya Unlu, Nilufer Durmaz Hilmioglu

PII: S0376-7388(18)30294-1
DOI: https://doi.org/10.1016/j.memsci.2018.05.005
Reference: MEMSCI16145

To appear in: *Journal of Membrane Science*

Received date: 31 January 2018
Revised date: 2 May 2018
Accepted date: 3 May 2018

Cite this article as: Derya Unlu and Nilufer Durmaz Hilmioglu, PERVAPORATION CATALYTIC MEMBRANE REACTOR APPLICATION OVER FUNCTIONAL CHITOSAN MEMBRANE, *Journal of Membrane Science,* https://doi.org/10.1016/j.memsci.2018.05.005

PERVAPORATION CATALYTIC MEMBRANE REACTOR APPLICATION OVER FUNCTIONAL CHITOSAN MEMBRANE

Derya Unlu, Nilufer Durmaz Hilmioglu[*1]

Kocaeli University, Chemical Engineering Department, 41380, Kocaeli, Turkey

derya.unlu@kocaeli.edu.tr

niluferh@kocaeli.edu.tr

[*]Corresponding author**:** Tel: +902623033545; fax: +90 262 359 12 62, niluferh@kocaeli.edu.tr, niluferhilmioglu3@gmail.com

Abstract

In this study, homogeneous catalyst "Sulfosuccinic acid" was added into the polymer matrix, and the functional catalytic membrane was prepared. Chitosan was chosen as a polymeric material. Sulfosuccinic acid (SSA) loaded functional chitosan membranes have been used to synthesize fuel bioadditive ethyl levulinate in a pervaporation catalytic membrane reactor. The functional membrane was characterized by the TGA and SEM. The performance of SSA loaded functional chitosan membranes was investigated with binary mixtures of ethanol/water under varying operating conditions (feed concentration, temperature, SSA amount) to study the influence on separation performance. Pervaporation catalytic membrane reactor experiments were carried out to optimize operating conditions such as reaction time, reaction temperature, catalyst amount, and molar feed ratio. The kinetic model in PVCMR with the

[1] Postal address: Department of Chemical Engineering, Engineering Faculty, Kocaeli University, 41380 Kocaeli, Turkey