# Accepted Manuscript


Osmotic concentration of succinic acid by forward osmosis: Influence of feed solution pH and evaluation of seawater as draw solution

Jeng Yih Law, Abdul Wahab Mohammad

PII: S1004-9541(17)30694-8
DOI: doi:10.1016/j.cjche.2017.10.003
Reference: CJCHE 945

To appear in:

Received date: 4 June 2017
Revised date: 4 October 2017
Accepted date: 4 October 2017

Please cite this article as: Jeng Yih Law, Abdul Wahab Mohammad , Osmotic concentration of succinic acid by forward osmosis: Influence of feed solution pH and evaluation of seawater as draw solution. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Cjche(2017), doi:10.1016/j.cjche.2017.10.003

Separation Science and Engineering

# Osmotic concentration of succinic acid by forward osmosis: Influence of feed solution pH and evaluation of seawater as draw solution

**Jeng Yih Law[1,2] and Abdul Wahab Mohammad[1,*]**

[1] *Department of Chemical and Process Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia.*

[2] *Section of Chemical Engineering Technology, Universiti Kuala Lumpur, Malaysian Institute of Chemical & Bioengineering Technology, Lot 1988, Kawasan Perindustrian Bandar Vendor, Taboh Naning, 78000 Alor Gajah, Melaka, Malaysia.*

*Corresponding author. Tel.: +60 3 89214529; fax: +60 3 89214660.

*E-mail address*: drawm@ukm.edu.my (A.W. Mohammad).

Co-author. Tel.: +60 12 6526075.

*E-mail address:* jylaw@unikl.edu.my (J.Y. Law).

## ABSTRACT

In this study, we investigated the essential role of feed solution pH so as to gain insights into the transport mechanisms of succinic acid concentration by osmotically-driven forward osmosis (FO) process. FO performances including water flux and bidirectional transport of succinate and chloride anions were systematically examined using cellulose triacetate-based FO membrane. Additionally, real seawater was explored as draw solution. Experimental results revealed that the pH-dependent speciation of succinic acid can affect the FO performances.