

# Accepted Manuscript

A comparative theoretical and experimental study on Liquid-Liquid Equilibria (LLE) of membrane forming polymeric solutions

Amin Ghassemi, Milad Asgarpour Khansary, Mohammad Ali Aroon



PII: S0378-3812(16)30601-X

DOI: [10.1016/j.fluid.2016.12.005](https://doi.org/10.1016/j.fluid.2016.12.005)

Reference: FLUID 11349

To appear in: *Fluid Phase Equilibria*

Received Date: 2 September 2016

Accepted Date: 2 December 2016

Please cite this article as: A. Ghassemi, M.A. Khansary, M.A. Aroon, A comparative theoretical and experimental study on Liquid-Liquid Equilibria (LLE) of membrane forming polymeric solutions, *Fluid Phase Equilibria* (2017), doi: 10.1016/j.fluid.2016.12.005.

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.

# A comparative theoretical and experimental study on Liquid-Liquid Equilibria (LLE) of membrane forming polymeric solutions

Amin Ghassemi<sup>1</sup>, Milad Asgarpour Khansary<sup>2†</sup>, Mohammad Ali Aroon<sup>2,3\*‡</sup>

1- School of Metallurgy and Materials Engineering, Iran University of Science & Technology, Tehran, Iran

2- Membrane Research Lab, Caspian Faculty of Engineering, College of Engineering, University of Tehran, Rezvanshahr, Guilan, Iran

3- School of Chemical Engineering, College of Engineering, University of Tehran, Tehran, Iran

†Email: [miladasgarpour@ut.ac.ir](mailto:miladasgarpour@ut.ac.ir), ‡E-mail: [maaroon@ut.ac.ir](mailto:maaroon@ut.ac.ir),

\*Corresponding Author

## Abstract

The phase equilibria of two ternary system of Polyethersulfone (PES) - n-methyl pyrrolidine (NMP) – distilled Tap water (H<sub>2</sub>O) and Polysulfone (PSf) – NMP - H<sub>2</sub>O has been investigated critically using both theoretical and experimental methods. The cloud point measurement technique was used for determination of experimental binodal curves. Gamma-gamma ( $\gamma$ - $\gamma$ ), gamma-phi ( $\gamma$ - $\phi$ ), phi-gamma ( $\phi$ - $\gamma$ ) and phi-phi ( $\phi$ -  $\phi$ ) approaches were assessed using measured binodal data. Compressible regular solution (CRS), Nonrandom Two Liquids model (NRTL), Universal Quasi-Chemical theory (UNIQUAC) were used for activity coefficient ( $\gamma$ ) calculations and Gasem–Gao–Pan–Robinson modification to the

Download English Version:

<https://daneshyari.com/en/article/4768145>

Download Persian Version:

<https://daneshyari.com/article/4768145>

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