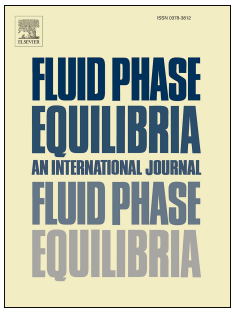

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A comparative theoretical and experimental study on Liquid-Liquid Equilibria (LLE) of membrane forming polymeric solutions

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Abstract

The phase equilibria of two ternary system of Polyethersulfone (PES) - n-methyl pyrolidine (NMP) – distilled Tap water (H_2O) and Polysulfone (PSf) – NMP - H_2O 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 (γ-γ), gamma-phi (γ-φ), phi-gamma (φ-γ) and phi-phi (φ- φ) 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