

عنوان مقاله:

Liquid-Liquid Equilibria of Binary Polymer Solutions Using a Free-Volume UNIQUAC-NRF Model

محل انتشار:

نهمین کنگره ملی مهندسی شیمی ایران (سال: 1383)

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خلاصه مقاله:

In this work, a free-volume model based on the UNIQUAC-NRF model developed by Haghtalab and Asadollahi was proposed. While the combinatorial part of the proposed model for activity coefficient takes the same form as that of the entropic free-volume (entropic-FV) model, the residual part is similar to that of in the UNIQUAC-NRF model. The proposed model, i.e., the FV-UNIQUAC-NRF model overcomes the main shortcoming of the original UNIQUAC-NRF model in predicting the lower critical solution temperature (LCST) for polymer solutions. The proposed model was applied to correlate the experimental data of Liquid-Liquid Equilibria (LLE) for various binary polymer solutions. The results obtained from the FV-UNIQUAC-NRF model were compared with those obtained from the FV-UNIQUAC model. The results of the proposed model show that the FV-UNIQUAC-NRF model can accurately correlate the experimental data for LLE of polymer solutions studied in this work. Another clear advantage of the proposed model is its capability in predicting the LCST for binary polymer solutions.

کلمات کلیدی:

free-volume, polymer solutions, Liquid-Liquid equilibria, phase behavior, UNIQUAC-NRF model

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