

عنوان مقاله:

Study of Physical Absorption of Carbon dioxide in imidazolium-based Ionic liquids

محل انتشار:

کنگره بین المللی علوم و مهندسی (سال: 1396)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

In this study, the solubility of CO₂ in imidazolium-based ionic liquids with different anions has been compared at 323.15 K in mole fraction and molality scales. The anions considered in this study are [PF₆]⁻, [OTf]⁻, [BF₄]⁻, [TF₂N]⁻. Results show that solubility of CO₂, expressed in mole fraction scale, in the following sequence: [C₈mim][TF₂N] > [C₄mim][OTf] > [C₈mim][PF₆] > [C₂mim][OTf] > [hC₂mim][BF₄] [C₂mim][BF₄]. When the concentration is switched to molality scale, the solubility of CO₂ in the ionic liquids in the following sequence: [C₈mim][TF₂N] ≈ [C₈mim][PF₆] > [C₄mim][OTf] > [C₂mim][OTf] > [C₂mim][BF₄] > [hC₂mim][BF₄]. The experimental data at 323.15 K were correlated by using the Pitzer's model. The Pitzer's model has a good predict for Ionic Liquids + carbon dioxide systems in this work.

کلمات کلیدی:

carbon dioxide, ionic liquids, gas sweetening, acid gas, modeling

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