

### Effect of Cyanide Anion in Ionic Liquids on Solubility of CO<sub>2</sub> in the Ionic Liquids

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Ionic liquid which melts below 100°C can be applied to various industries because of unique diverse physical, chemical properties. Combination cation and anion of ionic liquids can change depending on purpose as designer solvents. This study focuses ionic liquids on soluble of CO<sub>2</sub> favorably. The CO<sub>2</sub> capturing technology in CCS (Carbon capture and storage) needs to separate CO<sub>2</sub> into other gases. Amine compound is generally used as CO<sub>2</sub>-absorbing solvents in almost every industrial process. But these amine-solvents have several problems such as toxicity, corrosiveness, etc. Recently ionic liquids are received attention as new CO<sub>2</sub> absorbing solvent. Therefore, it is important to gather a lot of data about solubility of CO<sub>2</sub> in many different ionic liquids. The Solubility of CO<sub>2</sub> in ILs has been experimentally studied for development of a separation process of mixed gas containing CO<sub>2</sub>. The range of temperature for the experimental measurements is from 303.15 K to 373.15 K. The experimental (CO<sub>2</sub> + ionic liquid) data were correlated with Peng-Robinson equation of state (PR-EoS).