

## Recovery of Diluted Ionic Liquid in Water Using Ion Exchange Chromatography

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In these days, ionic liquids had newly arisen in chemical engineering as functional substances, and it is potentially possible to apply these ionic liquids to other science and engineering areas. However it several drawbacks; ionic liquids are relatively expensive as compared with the conventional solvents and it is difficult to perfectly recover used ionic liquid for reuse. Usually, ionic liquids, which used in chemical process, remained in diluted water solution and were decomposed to the cationic and anionic forms. The purpose of this study is to purely recover ionic liquid from diluted ionic liquid-water mixture by the displacement ion exchange chromatography base on the physical properties of ionic liquids. [Bmim][BF<sub>4</sub>] aqueous solution was used as a model ionic liquid-water mixture system and recovery of [Bmim][BF<sub>4</sub>] had performed with several kinds of mobile-phase systems. Results of recovery of [Bmim][BF<sub>4</sub>] were confirmed by the UV spectroscopy and the mass spectrometry.