

Magnetic Behavior of Mixture of Magnetic Ionic Liquid [bmim]FeCl₄ and Water

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The magnetic response of the mixture of 1-butyl-3-methylimidazolium tetrachloroferrate ([bmim]FeCl₄) and water was investigated. The [bmim]FeCl₄ rich phase in the mixture forming two phases was easily separated under an external magnetic field. The homogeneous mixtures of [bmim]FeCl₄ and water were also attracted to the direction of the magnetic field. Under a gradually varied magnetic field, the concentration of the mixture varied as a function of the magnetic field strength. We confirmed the possibility of a magnetic recovery system using the mixtures of [bmim]FeCl₄ and water.