

Ionic liquid supported membrane for CO₂ sequestration

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In this work, a supported ionic liquid membrane (SILM) can be prepared by impregnating different types of polymers with suitable novel Phosphonium-Based Ionic liquids (ILs). ILs have reached an enormous interest as CO₂ solvents and other engineering applications due to their unique properties such as negligible vapour pressure and selectivity, making them very attractive in order to obtain stable supported liquid membranes. This work can appraise the preparation and use of a new class of supported liquid membranes. ILs are compounds that typically contain organic cations and inorganic anions with unique properties. These ILs can be synthesized by the reaction of phosphonium-based salts with different hydrogen bond donors. Phosphonium cations based ILs are a readily available family of ILs that in some applications after superior properties as compare to Nitrogen cation based ILs. Applications recently investigated include their use as Extraction solvents, Chemical synthesis solvents, electrolytes in batteries, and super capacitors anions combinations available commercially have also been increasing in recent years. Here we provide an overview of the properties of these interesting materials and the applications in which they are appearing. An evaluation of the membrane stability was carried out for stable SILMs can be experimentally determined.