

### Electrochemical properties of morpholinium salt electrolyte for electrochemical batteries applications

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Room Temperature Ionic liquids have received attentions as green solvents. Recently, other applications in electrolytes are also finding, because of their favorable properties, such as non - volatility, high ionic conductivities, wide electrochemical windows, negligible - flammability, high thermal stability. In the present study, new families of salts based on morpholinium organic cations combined with the bis(trifluoromethane sulfonyl)imide anions are reported. Morpholinium cation - based ILs' potential uses as electrolytes based on following some reasons: The effect of oxygen group in the cation for ionic conductivity, the advantages of synthesis and purification processes and cost reduction in production of imidazolium ionic liquids. In this work, we report morpholinium cation-based ionic liquids, present the properties of these ILs and result electrolyte application. In addition, the physical and electrochemical characteristics of these Ionic liquids based have been investigated for their uses as electrolytes.