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(54) Title: ELECTROLYTE COMPOSITIONS AND ELECTROCHEMICAL DOUBLE LAYER CAPACITORS FORMED THERE FROM

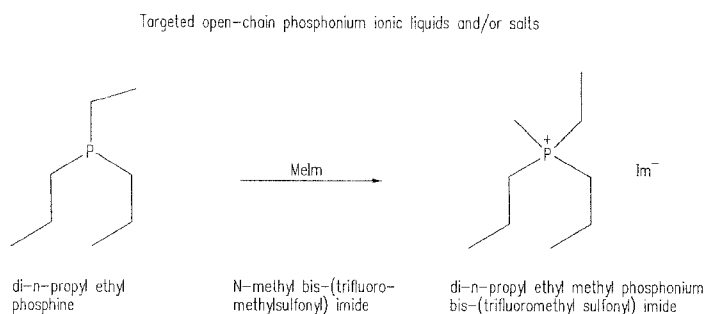


FIG. 3

(57) Abstract: The invention generally encompasses phosphonium ionic liquids, salts, compositions and their use in many applications, including but not limited to: as electrolytes in electronic devices such as memory devices including static, permanent and dynamic random access memory, as electrolytes in energy storage devices such as batteries, electrochemical double layer capacitors (EDLCs) or supercapacitors or ultracapacitors, electrolytic capacitors, as electrolytes in dye-sensitized solar cells (DSSCs), as electrolytes in fuel cells, as a heat transfer medium, among other applications. In particular, the invention generally relates to phosphonium ionic liquids, salts, compositions, wherein the compositions exhibit superior combination of thermodynamic stability, low volatility, wide liquidus range, ionic conductivity, and electrochemical stability. The invention further encompasses methods of making such phosphonium ionic liquids, salts, compositions, operational devices and systems comprising the same.



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see Notice of 30 July 2015