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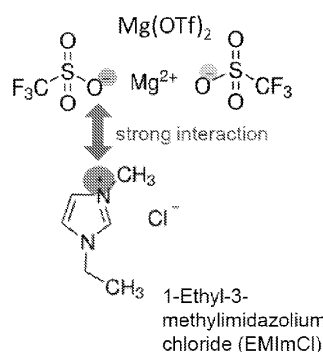
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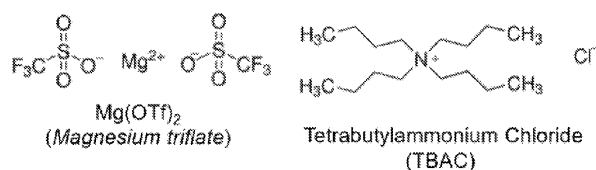
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(54) Title: AN ELECTROLYTE FOR MAGNESIUM ION BATTERIES

Fig. 4a



5 Fig. 4b



(57) Abstract: There is a liquid electrolyte composition comprising: i) a magnesium salt comprising a trifluoromethane sulfonate anion; ii) an additive comprising an organic halide salt, an inorganic halide salt or a mixture thereof; and iii) a solvent comprising one or more ethers, wherein the organic halide salt comprises a halide anion and a cation selected from an optionally substituted quaternary ammonium or a three to nine membered N-heterocyclic cation, and the cation comprises at least one protonated nitrogen capable of dissociating the trifluoromethane sulfonate anion from the magnesium salt, and wherein the total concentration of cations of the inorganic halide salt and magnesium ions of the magnesium salt divided by the concentration of anions of the inorganic halide salt is greater than 1 in the electrolyte composition. There is further provided an electrochemical cell comprising a) a positive electrode; b) a magnesium negative electrode; and c) the electrolyte composition as described herein, wherein the positive electrode and the magnesium

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