



(51) International Patent Classification:

H01M 4/38 (2006.01) *H01M 4/58* (2010.01)
H01M 4/40 (2006.01) *H01M 6/16* (2006.01)

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(21) International Application Number:

PCT/US2009/004340

(22) International Filing Date:

27 July 2009 (27.07.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/084,111 28 July 2008 (28.07.2008) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM,

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(54) Title: THF-BASED ELECTROLYTE FOR LOW TEMPERATURE PERFORMANCE IN PRIMARY LITHIUM BATTERIES

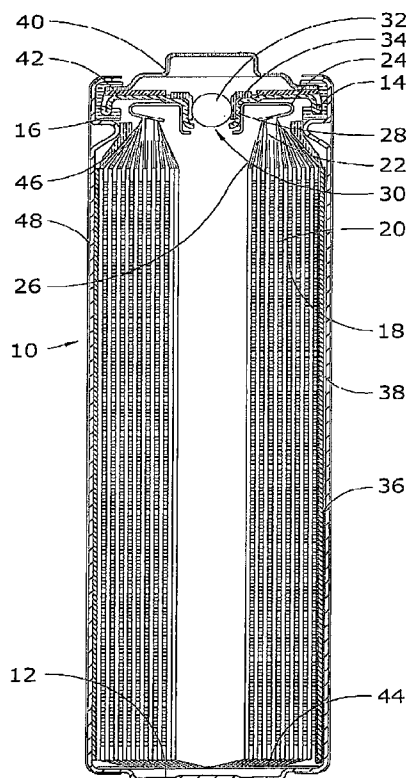


FIGURE 10

(57) Abstract: An electrochemical cell (10) showing improved low temperature performance, said electrochemical cell comprises a cylindrical container (12) having an open end; a top cover (14) sealing the open end; a jellyroll electrode assembly disposed inside of the container, the electrode assembly comprising: an anode (18) consisting essentially of lithium or a lithium-based alloy; a cathode (20) consisting of a mix comprising a conductor, a binder and at least 80 wt. % of iron disulfide coated onto a solid foil current collector (22); and a separator (26) disposed between the anode (18) and the cathode (20); and an electrolyte having a solvent blend consisting essentially of 10-95 wt.% of tetrahydrofuran and 5-90 wt% of 1, 3-dioxolane- and a solute selected from the group consisting of: lithium imide, lithium iodide and combinations thereof. Alternatively the electrolyte consists essentially of a solute dissolved in tetrahydrofuran, 1, 3-dioxolane and 1, 2 -dime thoxy ethane or the electrolyte has a solvent blend consisting essentially of 10-95 wt% of tetrahydrofuran-based solvent, 5-90 wt% of 1, 3-dioxolane and 0-40 wt% of 1, 2 -dime thoxy ethane and a solute selected from the group consisting of: lithium imide, lithium iodide and combinations thereof.

WO 2010/014194 A1



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, **Published:**
ML, MR, NE, SN, TD, TG).

— *with international search report (Art. 21(3))*