

**5474860****SOLID POLYMER ELECTROLYTES**

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This invention relates to Li ion (Li<sup>+</sup>) conductive solid polymer electrolytes composed of poly(vinyl sulfone) and lithium salts, and their use in all-solid-state rechargeable lithium ion batteries. The lithium salts comprise low lattice energy lithium salts such as LiN(CF<sub>3</sub>SO<sub>2</sub>)<sub>2</sub>, LiAsF<sub>6</sub>, and LiClO<sub>4</sub>.

**5478364****METHOD OF MANUFACTURING LITHIUM SECONDARY BATTERY**

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The lithium secondary battery includes a positive electrode, a nonaqueous ion conductive medium, and a negative electrode, and the negative electrode includes as a main constituent graphite which permits intercalation and deintercalation of lithium ions, together with copper oxide and a binder.

**5478668****RECHARGEABLE LITHIUM BATTERY CONSTRUCTION**

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A rechargeable lithium ion battery comprises a plurality of interleaved flexible electrolytic cells, each of which is a unitary planar laminated structure comprising polymeric anode, cathode, and intermediate electrolyte layers disposed between electrically conductive anode and cathode collector foil elements. One of the collector foils of a cell has an open grid structure to

allow penetration of electrolyte solution into the cell layer while the other is substantially more continuous to provide supporting strength to the cell. At least a pair of cells having respective continuous foil anode and cathode collectors are interleaved in spiral-folded fashion to present those collector foils at the outer surface of the resulting structure to provide terminal contacts for the resulting high-capacity, low-profile battery.

**5478671****NONAQUEOUS SECONDARY BATTERY**

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A nonaqueous secondary battery comprises an anode active material, a cathode active material and a nonaqueous electrolyte. The anode active material is a transition metal oxide of which an inherent crystal structure has been changed by insertion of lithium ions, and is in the condition that the changed crystal structure is not changed during repeated charging and discharging.

**5478672****NONAQUEOUS SECONDARY BATTERY, POSITIVE-ELECTRODE ACTIVE MATERIAL**

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A nonaqueous secondary battery comprising: a positive electrode; a negative electrode; and a nonaqueous ion conductor; the negative electrode comprising an active material which contains lithium or enables lithium to intercalate/deintercalate or insertion/desertion; the positive electrode comprising an active material which is a lithium manganese composite oxide having an X-ray diffraction pattern using a CuK alpha-ray which shows at least three peaks in the ranges between 15.2 degrees and 15.6 degrees, between 18.6 degrees and 18.8 degrees, and between 24.5 degrees and 25.1 degrees, the ratio of a peak intensity in the range between 27 degrees and 33 degrees to a peak intensity in the range between 15.2 degrees and 15.6 degrees being less than 0.02.