5521027

NON-AQUEOUS SECONDARY ELECTROCHEMICAL BATTERY

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A non-aqueous secondary electrochemical battery which includes a complex oxide containing lithium for a cathode, carbon for an anode, and a mixed solvent for an electrolyte is disclosed. The mixed solvent is obtained by dissolving an inorganic salt in a mixture of a cyclic ester and an asymmetric chain carbonate. The cyclic ester is selected from the group consisting of ethylene carbonate, propylene carbonate, butylene carbonate and gamma-butyrolactone. The asymmetric chain carbonate is selected from the group consisting of ethylmethyl carbonate, methylpropyl carbonate and ethylpropyl carbonate. In this way, a non-aqueous secondary electrochemical battery having an improved cycle life capability, discharge performance, and low temperature performance can be obtained.

5521028

COLLECTOR-ELECTRODES ASSEMBLIES FOR THIN FILM GENERATORS

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Metallization by deposit under vacuum of metal on a face of a support film of synthetic resin at a thickness of 0.005 to 0.1 micron, followed by the electrochemical deposit of an additional metallic layer, whose thickness is between 0.1 and 4 microns. A coating of an electrode of a generator is then applied on the surface of the collector thus prepared. The assembly is characterized by the adhesion of its components and its facility of mechanized handling during the steps of assembling the complete generator.

5521029

CURRENT COLLECTING ELEMENTS

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The present invention is directed to a substrate with a coating of titanium suboxide thereon. The coating protects the substrate from corrosion. Typically, the substrate is a current collector for a lead acid battery. The present invention is also directed to a process for forming the coating of titanium suboxide coating on the substrate. A colloidal dispersion of titanium suboxide particles in water is formed. The pH of the colloidal dispersion is brought within the range of 3 or less. The substrate to be coated is then placed in the colloidal dispersion. A positive electrode is also placed in the colloidal dispersion. An electric field is then introduced into the colloidal dispersion to effect electrophoretic deposition of the titanium suboxide on the substrate.

5522955

PROCESS AND APPARATUS FOR PRODUCING THIN LITHIUM COATINGS ON ELECTRICALLY CONDUCTIVE FOIL FOR USE IN SOLID STATE RECHARGEABLE ELECTROCHEMICAL CELLS

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The present invention provides a novel process and apparatus for coating electrically conductive substrate with alkali metal by vacuum metallizing. Novel methods and apparatus are provided to protect the alkali metal surface against atmospheric degradation. The alkali metal coated substrate prepared according to this invention can be used as an anode in electrochemical batteries.