sites, and transition metal atoms occupy the 8a sites and about half of the 16d sites in said inverse spinel structure. In particular, these inverse spinel compounds can be suitable for use in lithium ion batteries. Along with high operating voltage, such batteries can exhibit reasonable capacity, great capability and reversibility.

5520794

ELECTROWINNING OF LEAD

Gernon Michael D Upper Providence, PA, UNITED STATES assigned to Elf Atochem North America Inc

An electrowinning process for lead incorporating a variety of alkanesulfonic acid-based electrolytes in the absence of a redox couple, is disclosed; an inert anode and a lead accepting cathode are utilized.

5520903

METHOD OF MAKING LITHIUM METAL OXIDE CATHODE ACTIVE MATERIAL

Chang On K; Lundquist Joseph San Jose, CA, UNITED STATES

A method of making a composition having lithium, transition metal and oxygen elements and preferably having vanadium as the transition metal with a unit structure of the nominal general formula LiV3O8, such structure being able to accept lithium ions. The method as exemplified by the formation of Li1+xV3O8 (0< or =x< or =0.2) comprises forming a mixture of intermingled particles of vanadium pentoxide (V2O5) and lithium carbonate (Li2CO3) each in an amount sufficient to provide a stoichiometric ratio of approximately 1:3 of lithium to vanadium respectively; compacting the particles by applying a compressive force to the intermingled particles; and heating the intermingled particles to an elevated temperature which is below the melting point of the LiV3O8 product of the invention. The compacting and heating steps consolidate the particles into a densified body and cause diffusion of at least a portion of the elements across particle boundaries with release of carbon dioxide, thereby providing a lithium-vanadium-oxygen composition having a unit structure of Li1+xV3O8.

5521024

LEAD ACID STORAGE BATTERY

Sasaki Masaaki; Arakawa Masahiro; Horii Tohru; Murata Kazuo Takatsuki, JAPAN assigned to Yuasa Corporation

A lead acid storage battery has a cell composed of a positive plate comprising a positive active material layer and a positive current collector plate, a negative plate comprising a negative active material layer and a negative current collector plate, a separator and a frame-shaped gasket. In the cell, the positive plate and the negative plate are laminated with the gasket put between them. The gasket is in contact with peripheral edges of the positive current collector plate and the negative current collector plate. The positive active material layer and the negative active material layer are located in a cell space surrounded by both of the plates and the gasket with the separator put between them.

5521026

PROCESS FOR PREPARING SOLUTIONS OF A POSITIVE ELECTRODE FOR POLYMER ELECTROLYTE BATTERY BY PRE-DISPERSION OF SOLID POWDERS

Brochu Fernand; Duval Michel Longueuil, CANADA assigned to Hydro-Quebec

To prepare polymer dispersions containing large quantities of solid particles, with at least some of these consisting of materials with a high specific area (>50 m2/g) or oil absorption capacity, the mixture of particles is first co-ground in a non polar solvent. The co-ground mixture is dried until obtaining a dry powder of reagglomerated particles, which is dispersed in a solution containing a polymer and possibly a salt. Large quantities of solid particles can thus be dispersed while maintaining adequate rheological properties for the dispersion, and low porosities and few surface defects in the films obtained by coating the dispersion. This process can be used to prepare thin films of positive electrode for lithium polymer batteries, as well as in the paint, coatings and magnetic tape industry.