

**5478673****NONAQUEOUS SECONDARY BATTERY**

Funatsu Eiji Kanagawa, JAPAN assigned to Fuji Photo Film Co Ltd

A nonaqueous secondary battery comprises an anode active material, a cathode active material and an electrolytic solution. The anode active material comprises a transition metal oxide, and the electrolytic solution is prepared by dissolving a fluorine-containing lithium salt in a mixed solvent comprising ethylene carbonate and at least one selected from the group consisting of chain carbonic acid esters, cyclic carbonic acid esters, cyclic esters, chain ethers and cyclic ethers.

**5478674****NONAQUEOUS ELECTROLYTE-SECONDARY BATTERY**

Miyasaka Tsutomu Minami ashigara, JAPAN assigned to Fuji Photo Film Co Ltd

A lithium ion type nonaqueous electrolyte-secondary battery which comprises a positive electrode which comprises, as an active material, a compound oxide represented by the following chemical formula (I): (\*See Patent for Tabular Presentation\*) PS wherein A represents at least one alkali element selected from the group consisting of Na and K; M represents at least one transition element selected from the group consisting of Co, Mn and Ni; J represents an element having a glass-forming ability selected from the group consisting of B, Si, Ge, P, V, Zr, Sb and Ti;  $0.8 < \text{or} = x < \text{or} = 1.3$ ;  $0 < \text{or} = y < \text{or} = 0.2$ ;  $0.8 < \text{or} = z < \text{or} = 2.0$ ;  $0.01 < \text{or} = m < \text{or} = 0.2$ ; and  $2.0 < \text{or} = p < \text{or} = 2.7$ ; a negative electrode; and a nonaqueous electrolyte. The positive electrode-active material permits the production of nonaqueous electrolyte lithium type secondary batteries having excellent charge-discharge characteristics, discharge voltages and cycle properties.

**5478675****SECONDARY BATTERY**

Nagaura Toru Fukuoka, JAPAN assigned to Hival Ltd

A nonaqueous electrolyte secondary battery comprising a cathode, an anode, a separator and a nonaqueous electrolyte, wherein a spinel type lithium manganese complex oxide is used as main active substance for the cathode, which is characterized in that a solid state lithium ion conductor is mixed with the main active substance in the cathode.

**5480462****METHOD OF FORMING BUTTON-TYPE BATTERY LITHIUM ELECTRODES**

Tuttle Mark E Boise, ID, UNITED STATES assigned to Micron Communications Inc

A method of forming a button-type lithium electrode includes: a) masking an electrically conductive sheet with a material to which elemental lithium will not appreciably adhere to define a masked portion and an unmasked portion, the unmasked portion being in the shape of the desired electrode being formed; b) applying molten lithium to the masked sheet to cause elemental lithium to adhere to the unmasked portion but not appreciably adhere to the masked portion; alternately, directing a lithium stream onto the sheet; c) solidifying the lithium on the unmasked portion to in situ form a lithium electrode; and d) after solidifying, removing the masking material from the masked portion of the sheet. An alternate method includes: a) providing a release liner sheet having elemental lithium adhered thereto in the form of a series of discrete patterns having a size and shape of the lithium electrodes being formed; b) providing an electrically conductive sheet having an exposed surface which is divisible into a plurality of areas; c) laminating the release liner sheet with the conductive sheet to adhere the series of discrete elemental lithium patterns onto the respective sheet areas; d) pulling the release liner sheet from the conductive sheet and discrete lithium patterns, leaving the discrete lithium patterns adhering to the conductive sheet; and e) cutting and forming a plurality of discrete battery terminal housing members from the areas of the sheet, with each of the discrete battery terminal housings bearing one of the discrete lithium patterns.