

electrochemical capacity is increased. Both effects are desirable for anode materials in lithium ion type batteries.

5498495

ALLOY FOR NEGATIVE ELECTRODE OF LITHIUM SECONDARY BATTERY AND LITHIUM SECONDARY BATTERY

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An alloy for a negative electrode of a lithium secondary battery, comprising an Li-Ag-Te type alloy having an atomic ratio of Li:Ag:Te=15-120:1-20:0.001-2, an alloy for a negative electrode of a lithium secondary battery, comprising an Li-Ag-Te-(M1-M2) type alloy having an atomic ratio of Li:Ag:Te:M1:M2=15-120:1-20:0.001-2:1-50:1-30 wherein M1 is a 3A-5A group metal and M2 is a transition metal other than Ag, and a lithium secondary battery comprising a negative electrode composed of the above-mentioned alloy. According to the present invention, a negative electrode, wherein the growth of dendrite is suppressed, charge-discharge capacity is high, energy density is high and degradation due to repetitive charge-discharge is less, can be obtained. By the use of the negative electrode obtained in the present invention, moreover, a lithium secondary battery superior in charge-discharge cycle life, which has high energy density permitting long-term use, high electromotive force and high charge-discharge capacity, can be produced.

5498764

NEGATIVE ELECTRODE FOR LITHIUM SECONDARY CELLS AND LITHIUM SECONDARY CELLS USING THE SAME

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A negative electrode for lithium secondary cells comprises a substrate having a metallic lithium matrix

on at least a surface portion thereof. An element is dispersed and doped in the lithium matrix and has an electronegativity greater than that of metallic lithium. The element is present in the matrix at a concentration of from less than 5×10^{19} atoms/cm³ to 5×10^{15} atoms/cm³. By this, dendrite crystals of lithium are suppressed from forming during the course of charge and discharge cycles. A lithium secondary cell using the negative electrode is also described.

5500291

LITHIUM ION CONDUCTIVE SOLID ELECTROLYTE AND PROCESS FOR SYNTHESIZING THE SAME

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A sulfide-based lithium ion conductive solid electrolyte having a high ion conductivity and a high decomposition voltage contains crosslinking oxygen ions and silicon ions combined with the crosslinking oxygen ions in a structure of (*See Patent for Chemical Structure*).

5501919

SOLID ION CONDUCTING MATERIAL, OBTAINED FROM A POLYMER AND AN ALKALINE CATION SALT, WITH APPLICATION AS AN ELECTROLYTE

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A solid ion conductor material is made from branched polyethylene imine and a lithium cation salt in such a manner that the ratio of the number of nitrogen atoms contained in the polymer to the number of lithium cations originating from the salt is optimized. The branched polyethylene imine can be plasticized within a certain proportionate range of plasticizer. This type of material is used as electrolyte, notably in electrochromic systems.