5483145

SECONDARY BATTERY CHARGING CIRCUIT

Shiojima Nobuo; Enomoto Sadakaz Tokyo, JAPAN assigned to Toshiba Battery Co Ltd

A secondary battery charging circuit of this invention includes a charging source for supplying a charging current to a secondary battery, a temperature detection unit for generating an output which changes almost linearly with respect to a change in temperature of the secondary battery during a charging operation, a differential unit for obtaining a differential value of an output from the temperature detection unit, a comparator unit for comparing the differential value during the charging operation with a setting value, and for, when the relationship between the two values is reversed, generating an inverted output, a timer circuit unit, started simultaneously with start of the charging operation of the secondary battery, for generating a timer output after an elapse of a predetermined period of time, and a charge control unit for controlling the charging operation of the secondary battery in response to one, generated earlier, of the inverted output from the comparator unit, and the timer output from the timer circuit unit.

5483165

BATTERY SYSTEM AND METHOD FOR DETERMINING A BATTERY CONDITION

Cameron David B; Powers Daniel; Lyster Thomas; Morgan Carlto Seattle, WA, UNITED STATES assigned to Heartstream Inc

This invention is a battery monitor and battery capacity indicator that uses a sense cell in addition to the main battery to determine main battery remaining capacity and depletion condition. A parameter of the sense cell is related to the main battery capacity so that the main battery will have a minimum capacity remaining when the sense cell parameter reaches a particular value or crosses a particular threshold. In a preferred embodiment, the sense cell is a battery which is identical and of the same manufacturing lot as the battery cell or cells in the main battery pack. A current is drawn from the sense cell that is larger than the current being drawn from the main battery. When the sense cell is fully depleted, the main battery will have a remaining capacity whose magnitude depends on the relationship between the main battery current and the sense cell current.

OTHER BATTERIES

365801

BATTERY

Lindahl Richar Malmo SWEDEN assigned to Telefonaktiebolaget L M Ericsson

The ornamental design for battery, as shown and described.

5474858

METHOD FOR PREVENTING GAS FORMATION IN ELECTRO-CHEMICAL CELLS

Merritt Donald R Brooklyn Center, MN, UNITED STATES assigned to Medtronic Inc

A non-aqueous electrochemical cell comprising an active metal anode, an organic electrolyte and a cathode comprising a minor amount of a desiccant which is insoluble in the organic electrolyte and non-reactive during cell discharge. The resulting cell has been found to be resistant to internal gas generation. Such a desiccant is particularly useful in lithium/manganese dioxide cells.

5474861

ELECTRODE FOR NON-AQUEOUS ELECTROLYTE SECONDARY BATTERY

Bito Yasuhiko; Murai Hiroyuki; Hasegawa Masaki; Ito Shuji; Toyoguchi Yoshinori Minamikawachi, JAPAN assigned to Matsushita Electric Industrial Co Ltd

An electrode for a non-aqueous electrolyte secondary battery to be embodied in both the anode and cathode.

It comprises a mixture including,an active material having reversibility for charging and discharging, and a whisker which is chemically and electrochemically inert. Said active material is a substance capable of reversibly intercalating and deintercalating lithium. Said mixture includes a binding agent and constitutes a solid structural body. Said whisker is at least one selected from the group consisting of silicon carbide whisker, silicon nitride whisker, potassium titanate whisker and aluminum borate whisker.

5474862

NONAQUEOUS ELECTROLYTE SECONDARY BATTERIES

Okuno Hiromi; Koshina Hizuru; Kawahara Takayuki; Hasegawa Katsuaki Osaka, JAPAN assigned to Matsushita Electric Industrial Co Ltd; Mitsubishi Petrochemical Company Limit

A nonaqueous electrolyte secondary battery having excellent cycle life characteristic, stability in storage at high temperatures and low-temperature characteristic, which is provided with an anode including a carbon material capable of doping and undoping lithium ion, a nonaqueous electrolyte and a cathode including a lithium-containing oxide, the solvent for the nonaqueous electrolyte being a mixed solvent including an aliphatic carboxylate, a cyclic carbonate and a chain carbonate, with the aliphatic carboxylate being represented by the formula RCOOR' where R represents an ethyl group and R' represents an alkyl group of 1-3 carbon atoms and the cyclic carbonate being one of ethylene carbonate and propylene carbonate.

5476732

ELECTROCHEMICAL CELL

Coetzer Johan Transvaal, SOUTH AFRICA assigned to Programme 3 Patent Holdings

A high temperature rechargeable electrochemical power storage cell has an anode compartment and a cathode compartment separated from each other by a separator. The cathode compartment contains a current collector; an alkali metal aluminium halide molten salt electrolyte having the formula MAlHal4; an alkali metal halide; and a cathode. The cathode comprises an electrolyte-permeable porous matrix, a first active cathode substance in the matrix in a first zone adjacent the current collector and spaced from the separator, and a second active cathode substance in the matrix in a further zone adjacent the first zone. The first active cathode substance is such that it gives rise to a higher cell potential than does the second active cathode substance. The cell is chargeable at a temperature at which the electrolyte and the alkali metal are molten to cause the active cathode substances to be halogenated.

5476733

ELECTROCHEMICAL CELL

Coetzer Johan; Vlok Isak L Transvaal, SOUTH AFRICA assigned to Programme 3 Patent Holdings

A high temperature rechargeable electrochemical power storage cell has a molten sodium anode separated by sodium ion-conducting solid electrolyte separator from a solid cathode comprising an electronically conductive electrolyte-permeable porous matrix. The matrix is impregnated with a molten salt electrolyte, and has solid active cathode material dispersed therein. The molten salt electrolyte comprises a substantially equimolar mixture of sodium chloride and aluminium chloride. The active cathode material comprises at least one transition metal selected from the group consisting of Fe, Ni, Cr, Co, Mn, Cu and Mo having, dispersed therein, at least one additive element selected from the group consisting of As, Bi, Sb, Se and Te. The atomic ratio of transition metal:additive element in the active cathode material is 99:1-30:70, the cell having a charged state in which the active cathode material is chlorinated. The invention also provides a method of making such cell.

5478669

CYLINDRICAL CELL WITH IMPROVED CLOSURE ASSEMBLY

Flack Rober Markham, CANADA assigned to Battery Technologies Inc

PCT No. PCT/CA92/00550 Sec. 371 Date Jun. 16, 1994 Sec. 102(e) Date Jun. 16, 1994 PCT Filed Dec. 21, 1992 PCT Pub. No. WO93/12549 PCT Pub. Date Jun. 24, 1993. An electrochemical cell of cylindrical type,