LEAD ACID

5474863

SEALED LEAD ACID BATTERIES WITH POROUS POLYMER PARTICLES

Yamamoto Osamu Hirakata, JAPAN assigned to Matsushita Electric Industrial Co Ltd

The sealed lead acid battery comprises a positive and/or negative electrode made of an active material added with porous polymer particles having an average pore diameter of 0.05 to 10μ and a particle size of 0.1 to 0.8mm. The additive amount of the porous polymer particles ranges from 0.2 to 3 wt. %. The active material may be incorporated with porous particles of 0.3 to 5 wt. % previously impregnated therein with sulfric acid. The resultant sealed lead acid battery has a high energy density and is superior in a high efficient discharge characteristic, a cycle life characteristic and a low temperature characteristic.

FUEL CELL

5474800

METHOD FOR PREPARING ANODE FOR SOLID OXIDE FUEL CELLS

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A method of manufacturing an anode for solid oxide fuel cells is disclosed whereby the dispersion of nickel particles which form the anode for the solid oxide fuel cell is ensured, coherence of the Ni or NiO particles when being annealed or when generating electricity is prevented, the adhesion of the anode to the solid electrolyte layer is good, the contact resistance is reduced, and the electrode performance is improved. To form an anode on one surface of the central solid electrolyte layer, first, Ni or NiO, and a solution of an organometallic complex salt in an organic solvent, from which is obtained thin- films or minute particles of a solid electrolyte by thermal decomposition, are blended, and the solvent is evaporated until a suitable viscosity is obtained. The slurry obtained in this manner is coated onto the central solid electrolyte layer and this coated film is then dried, annealed, and thermally decomposed to obtain an NiO-solid-electrolyte or an Ni-solid-electrolyte cermet.

5474857

SOLID POLYMER TYPE FUEL CELL AND METHOD FOR MANUFACTURING THE SAME

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The invention provides a solid polymer electrolyte having high performances in which the reaction area of electrode is increased by uniformly dispersing and bonding a solid polymer electrolyte and a catalyst and the ability of gas feeding to the reaction site is improved by adding a fluoropolymer so that the catalyst is not excessively coated. A method for making the fuel cell is also provided. The electrode provided on at least one side of a solid polymer electrolyte membrane is formed by coating on one side of a gas-diffusible layer a mixed dispersion of a noble metal catalyst, a carbon fine powder and a colloidal dispersion of a solid polymer electrolyte, the colloidal dispersion being prepared using an organic solvent having a polar group other than hydroxyl group in the molecule and having a carbon chain of 1-8 carbon atoms which bonds to the polar group or having a dielectric constant of 3-10.

5474859

ELECTROCHEMICAL CELL DESIGN FOR USE UNDER HIGH SHOCK AND VIBRATION CONDITIONS

Takeuchi Esther S; Pyszczek Michael F East Amherst, NY, UNITED STATES assigned to Wilson Greatbatch Ltd

A structure for stabilizing of an electrochemical cell stack against high shock and vibration forces through the use of a plurality of electrode connections at both the top and bottom of the stack is described.