environment to cause the oxidized aluminium and oxide of the metal M to react to form the beta-alumina compound.

5521023

COMPOSITE ELECTROLYTES FOR ELECTROCHEMICAL DEVICES

Kejha Joseph B; Hope Stephen F Willow Grove, PA, UNITED STATES

A solid state polymer electrolyte composite which is formed by coating an inert electrically insulating ribbon or sheet of expanded or perforated plastic film with a liquid, ion-conductive polymer, and curing the polymer to form a solid state or semi-solid state electrolyte composite.

5521025

ELECTRO CHEMICAL CELL COMPRISING NON-RADIATION CURABLE SOLID POLYMER ELECTROLYTES

Chaloner-Gill Benjamin Santa Clara, CA, UNITED STATES

Electrochemical cells comprising solid polymeric electrolytes are composed of a solid polymeric matrix formed by polymerization of organophosphate compounds.

5523035

PROCESS FOR PRODUCING CARBONACEOUS MATERIAL

Sohda Yoshio; Kude Yukinori; Kohno Takefumi; Makino Hiroshi Machida, JAPAN assigned to Nippon Oil Co Ltd

A process for producing a carbon/carbon composite having a ceramic and carbon coating on its surface consists essentially of the steps of heating a carbon/carbon composite at a temperature of from 800° to 1,700°C, contacting the thus heated composite in the presence of hydrogen with at least one compound selected from the group consisting of halides and hydrides of Si, Zr, Ti, Hf, B, Nb and W in gaseous form to convert the surface of the carbon/carbon composite, in the absence of a carbon releasing gas, into a carbide ceramic layer and then forming a coating film consisting of both carbon and ceramic by vapor phase decomposition at a pressure of 5-100 Torr on said carbide ceramic.

5523180

IONICALLY CONDUCTIVE MATERIAL HAVING A BLOCK COPOLYMER AS THE SOLVENT

Armand Michel; Sanchez Jean-Yves; Alloin Fannie St Martin D'Uriage, FRANCE assigned to Centre National De La Recherche Scientifique; Hydro-Queb

PCT No. PCT/FR92/00542 Sec. 371 Date Dec. 15, 1994 Sec. 102(e) Date Dec. 15, 1994 PCT Filed Jun. 16, 1992 PCT Pub. No. WO93/26057 PCT Pub. Date Dec. 23, 1993. An ionically conductive material and its use are described. The material comprises at least one salt dissolved in a polymeric solvent and is characterized in that the polymeric solvent essentially consists of a block copolymer comprising at least one solvating segment and at least one segment having excellent mechanical properties, either intrinsically or once a number of segments have been cross-linked. Said material may be used as an electrolyte in various electrochemical systems.

5523181

POLYMER SOLID-ELECTROLYTE COMPOSITION AND ELECTROCHEMICAL CELL USING THE COMPOSITION

Stonehart Paul; Watanabe Masahiro Madison, CT, UNITED STATES assigned to Watanabe Masahiro; Stonehart Associates Inc

The polymer solid-electrolyte composition according to the present invention comprises a polymer solid

electrolyte selected from the group consisting of perfluorocarbon sulfonic acid, polysulfones, perfluorocarbonic acid, styrene-divinylbenzene sulfonic acid cation-exchange resins and styrene-butadiene anion-exchange resins, and 0.01-50% by weight of fine particle silica and/or fibrous silica fiber relative to the weight of the polymer solid electrolyte.

5523183

APPARATUS FOR USE IN A BATTERY

Koehler Paul C; Geibel Stephen; Di Palma Ralph Cortland, NY, UNITED STATES assigned to Pall Corporation

A battery electrode is provided comprising a porous, pleated metal structure, preferably comprising nickel as its substrate.

5525435

HYDROGEN STORAGE MATERIALS

Pourarian Faiz Verona, PA, UNITED STATES assigned to Eveready Battery Company Inc

A hydrogen storage material for use in various hydrogen absorber devices such as electrochemical cells, hydrogen separator devices, temperature sensors and the like, having the formula: (*See Patent for Tabular Presentation*) PS where R and R' are a rare earth metal; T is cobalt; T' is Ni, Fe, Mn or Cr; X is Ga; X' is Al, Si, Sn, Ge, Cr, In or Mo; x is from 0.0 to 3.6; y is from 0.0 to 9.0; and z is from 0 to 2.

5525436

PROTON CONDUCTING POLYMERS USED AS MEMBRANES

Savinell Robert F; Litt Morton Solon, OH, UNITED STATES assigned to Case Western Reserve University

The subject invention relates to solid polymer electrolyte membranes comprising proton conducting polymers stable at temperatures in excess of 100°C, the polymer being basic polymer complexed with a strong acid or an acid polymer. The invention further relates to the use of such membranes in electrolytic cells and acid fuel cells. Particularly, the invention relates to the use of polybenzimidazole as a suitable polymer electrolyte membrane.

5527643

CARBONACEOUS ELECTRODE MATERIAL FOR SECONDARY BATTERY AND PROCESS FOR PRODUCTION THEREOF

Sonobe Naohir; Iwasaki Takao; Masuko Jiro Iwaki, JAPAN assigned to Kureha Kagaku Kogyo Kabushiki Kaisha

A non-aqueous solvent-type secondary battery having a large charge-discharge capacity and exhibiting a high utilization rate of an active substance, such as lithium, and an excellent charge-discharge cycle characteristic, can be constituted by using a carbonaceous electrode material having a specific microtexture. The carbonaceous electrode material is characterized by having an average (002)-plane spacing d002 of 0.336-0.375 nm and a crystallite size in c-axis direction Lc(002) of at most 50 nm, respectively, as measured by X-ray diffraction method, and an optically anisotropic texture showing a fine mosaic texture when observed through a polarizing microscope. The carbonaceous material may suitably be produced through a process including the steps of: crosslinking a tar or pitch of a petroleum or coal origin, and carbonizing the crosslinked tar or pitch at a temperature of at least 800°C under a reduced pressure or in an inert gas atmosphere.

5529707

LIGHTWEIGHT COMPOSITE POLYMERIC ELECTROLYTES FOR ELECTROCHEMICAL DEVICES

Kejha Joseph Willow Grove, PA, UNITED STATES

Lightweight composite polymeric electrolytes which contain a lightweight inorganic filler, such as oxides of