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5635257**PROCESS FOR HYDROPHILIZING A
POROUS MATERIAL MADE OF
FLUORINE RESIN**

Nishii Masanob; Kawanishi Shunichi; Sugimoto Shunichi; Tanaka Tadaharu; Sano Mitsuru Kyoto, JAPAN assigned to Kurashiki Boseki Kabushiki Kaisha; Japan Atomic Energy Radiation Application Development Research Institute

The present invention relates to a process for hydrophilizing a porous material made of a fluorine resin comprising irradiating an ultraviolet laser beam on the porous material impregnated with an aqueous solution of hydrogen peroxide or water-soluble organic solvent. According to the process, the chemically and physically inactive surfaces including the inside of the micropores of the porous materials made of fluorine resins can be sufficiently hydrophilized without deteriorating the excellent heat resistance, chemical resistance and the like of the fluorine resins.

5637671**FLUORINE-CONTAINING COMPOUNDS
HAVING POLYACETALIC STRUCTURE,
AND PROCESS FOR PREPARING THEM**

Danusso Ferdinando; Strepparola Ezio; Levi Marinella; Tonelli Claudio; Turri Stefano Milan, ITALY assigned to Ausimont S p A

Disclosed herein are new fluorine-containing compounds having polyacetalic structure, of general formula: (*See Patent for Tabular Presentation*) PS where: Rf=a perfluorooxyalkylene chain having Mn from 500 to 5,000; m=4-25; c=1-10; n=2-100. 2). A process for preparing them which comprises carrying out the polycondensation of diols having formula: (*See Patent for Tabular Presentation*) PS with formaldehyde, in mass or in the presence of solvents, in an acid medium. The compounds of formula can be oligomeric compounds (polymerization degree xn from 2 to about 20) or polymeric compounds (xn from about 20 to about 100). They exhibit a high stability to heat and to chemical agents, and Tg values slightly different from the ones of the diols utilized for preparing them.

5637776**PRODUCTION OF
HYDROFLUOROCARBONS**

Burgess Leslie; Butcher Jane L; Ryan Thomas A; Clayton Peter P Runcorn, UNITED KINGDOM assigned to Imperial Chemical Industries PLC

A process for the production of a hydro(halo)fluorocarbon which comprises heating an alpha-fluoroether in the vapour phase at elevated temperature. alpha-fluoroethers are obtained by reacting a non-enolisable aldehyde with hydrogen fluoride to form an intermediate and reacting the intermediate with an alcohol or a halogenating agent. Novel alpha-fluoroethers are also provided.

5639837**PROCESS FOR MAKING
FLUOROPOLYMERS**

Farnham William Brown; Feiring Andrew Edward; Smart Bruce Edmund; Wheland Robert Clayton Hockessin, DE, UNITED STATES assigned to E I Du Pont de Nemours and Company

Disclosed herein is a process in which fluorine containing olefins are polymerized using an initiation system which is a combination of a fluoroaliphatic sulfinate or sulfinic acid and chlorate, bromate or hypochlorite ions. The resulting polymer contains fewer deleterious end groups and is more stable and/or easier to process. The polymers produced are useful as thermoplastics and elastomers.

5639906**FLUORESCENT AND NMR SENSITIVE PH
INDICATORS**

London Robert; Levy Louis A; Rhee Chung K Chapel Hill, NC, UNITED STATES assigned to The United States of America as represented by the Department of Health and Human Services

This invention relates to compositions and methods

useful for measuring pH generally, and intracellular pH specifically, and, more particularly, to a new class of fluorescent and fluorinated (NMR sensitive) aromatic compounds having excitation emission wavelengths in the ultraviolet or or visible portions of the electromagnetic spectrum, useful as pH indicators, as well as fluorine containing analogs useful in NMR spectroscopic determinations.

5639923

METAL-CATALYZED PREPARATION OF PERFLUOROALKYL IODIDE TELOMERS

Von Werner Konrad Garching, GERMANY assigned to Hoechst Aktiengesellschaft

The selectivity of copper as the catalyst for the reaction of short-chain perfluoroalkyl iodides with tetrafluoroethylene is increased if a further transition metal is employed as a cocatalyst.

5641887

EXTRACTION OF METALS IN CARBON DIOXIDE AND CHELATING AGENTS THEREFOR

Beckman Eric J; Russell Alan J Edgewood, PA, UNITED STATES assigned to University of Pittsburgh

The present invention provides a chelating agent suitable for chelating metals in liquid or supercritical carbon dioxide. The chelating agent comprises generally a conventional chelating group and a CO₂-soluble functional group covalently attached to the chelating group. Examples of suitable CO₂-soluble functional groups include fluorinated polyether groups, silicone groups, fluorinated polyalkyl groups, phosphazene groups and fluorinated polyacrylate groups. The present invention also provides a method of extracting a metal from a matrix containing at least one other material and the metal using such CO₂-soluble chelating agents.

5645959

BATTERY PLATES WITH SELF-PASSIVATING IRON CORES AND MIXED ACID ELECTROLYTE

Rowlette John J Monrovia, CA, UNITED STATES assigned to Bipolar Power Corporation

The Battery Plates with Self-Passivating Iron Cores and Mixed Acid Electrolyte disclosed and claimed in this patent application solve the problems encountered by previous attempts to construct practical bipolar plates for lead-acid batteries. One of the preferred embodiments of the present invention comprises a novel combination of a self-repairing substrate surrounded by a lead coating resulting in a bipolar plate which is nearly three times lighter than its pure lead counterpart. Since this innovative plate incorporates a core or substrate that is self-passivating under the electrical potential and highly acidic conditions found in the lead-acid battery, any pinholes, gaps, or flaws in the lead coatings are naturally resealed. Another preferred embodiment utilizes a coating of a semi-conducting metal oxide, such as fluorine-doped stannic oxide, on the positive side of the bipolar plate instead of lead, which further reduces the weight. The self-passivation of the central core is enhanced by combining phosphoric or boric acid with the sulfuric acid electrolyte used in the battery.

5646223

PERFLUORODIOXOLES, THE PREPARATION PROCESS THEREOF, AND HOMOPOLYMERS AND COPOLYMERS THEREFROM

Navarrini Walter; Tortelli Vito; Colaianna Pasqua; Abusleme Julio A Boffalora Ticino, ITALY assigned to Ausimont S p A

The invention relates to new thermoprocessable copolymers of tetrafluoroethylene constituted by perfluoromethylvinylether (0.5-13% by weight), a fluorinated dioxole (0.05-3%) and tetrafluoroethylene (difference to 100%), particularly useful for coating electric cables by melt extrusion. It relates also to new perfluorodioxoles of formula (*See Patent for Chemical

Structure*) wherein RF is a C1-C5 perfluoroalkyl radical; X1 and X2 are, independently from each other, F or CF₃; and their homopolymers and copolymers, in particular thermoprocessable copolymers as defined above.

5647894

**GAS SEPARATING COMPOSITE
MEMBRANE AND PROCESS FOR
PRODUCING THE SAME**

Ohara Tomom; Hachisuka Hisa; Xu Ping; Shimazu Akira; Ikeda Kenichi Osaka, JAPAN assigned to Nitto Denko Corporation

A gas separating composite membrane comprising two types of polyimide resin layers having different molecular structures and each having solubility in an organic solvent different from each other, the two layers being laminated being substantially independent or via a mixed layer, the first polyimide resin layer comprising a porous polyimide supporting membrane having a nitrogen gas permeation flux density at 25°C of at least 2 Nm³/m²/h/atm., and the second polyimide resin layer, which contributes to a gas separating performance comprising a fluorine-containing polyimide thin film containing at least three fluorine atoms in a repeating molecular structure unit which constructs the second polyimide resin layer has a very high gas permeation flux density while maintaining a high gas permeability, excels in heat resistance and chemical resistance, and satisfies a practical use in terms of cost.

5648215

TELOMERASE DIAGNOSTIC METHODS

West Michael; Shay Jerry; Wright Woodring E San Carlos, CA, UNITED STATES assigned to Board of Regents The University of Texas System

The presence of telomerase activity in a human somatic tissue or cell sample is positively correlated with the presence of cancer and can be used to diagnose the course of disease progression in a patient.

5648504

**PROCESS FOR PRODUCING
TETRAFLUOROPHTHALIC ANHYDRIDE**

Seki Ryuji; Sugimoto Koji; Kumai Seisaku Yokohama, JAPAN assigned to Asahi Glass Company Ltd

A process for producing tetrafluorophthalic anhydride, which comprises chlorinating tetrachlorophthalic anhydride to obtain 3,3,4,5,6,7-hexachloro-1-(3H)-isobenzofuranone, then fluorinating it to obtain 3,4,5,6-tetrafluorophthaloyldifluoride and/or 3,3,4,5,6,7-hexafluoro-1-(3)-isobenzofuranone, and further reacting the tetrafluorophthaloyldifluoride and/or the hexafluoro-1-(3H)-isobenzofuranone with an inorganic base or an organic acid to obtain tetrafluorophthalic anhydride.



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