

hydrophobic polymer and a dispersion of particulate carbon, the loading of precious metal being 0.011-1.0 mg/cm<sup>2</sup> of geometric electrode area. Said electrode demonstrates high effective platinum surface area and power density output when fabricated into a membrane electrode assembly.

**5506066**

**ULTRA-PASSIVE VARIABLE PRESSURE  
REGENERATIVE FUEL CELL SYSTEM**

Sprouse Kenneth Northridge, CA, UNITED STATES  
assigned to Rockwell International Corporation

An ultra-passive, variable pressure, regenerative fuel cell system in accordance with the invention utilizes a single gaseous hydrogen storage tank that encloses a plurality of smaller gaseous oxygen storage tubes. This design effectively eliminates the need for active pumping elements to protect the fuel cell's anode surface. A single heating/cooling coil, inside the gaseous hydrogen storage tank, is used to prevent: (a) icing inside the storage tanks due to isentropic expansion during electrical power generation, or (b) overheating of gases due to isentropic compression during electrical recharging operations. Advantageously, the invention also reduces the overall weight and mechanical complexity of the fuel cell system, thereby improving system reliability.

**5508127**

**SOLID OXIDE FUEL CELLS**

Lewin Robert G; Wood Geoffrey A Bury, UNITED  
KINGDOM assigned to British Nuclear Fuels plc

PCT No. PCT/GB93/01199 Sec. 371 Date Jun. 8, 1994  
Sec. 102(e) Date Jun. 8, 1994 PCT Filed Jun. 7, 1993  
PCT Pub. No. WO93/26055 PCT Pub. Date Dec. 23,  
1993. A solid fuel cell for high temperature operation  
including a refractory solid electrolyte, an anode and a  
cathode both in intimate contact with the electrolyte  
and an electronically conducting interconnect medium  
having pores or channels therethrough permitting  
oxidant and fuel to be delivered without mixing  
respectively to the cathode and the anode, wherein the

anode, cathode and interconnect medium are provided  
as zones within a common unitary material, the anode  
and cathode being present as zones adjacent to different  
surfaces of the material and the interconnect medium  
being present as a zone intermediate to the cathode and  
anode zones.

**5508128**

**FUEL CELL SYSTEM AND FUEL CELLS  
THEREFOR**

Akagi Kosuk Osaka, JAPAN assigned to Osaka Gas  
Co Ltd

A fuel cell includes an electrolyte layer in form of a  
plate, an oxygen electrode formed on one surface of the  
electrolyte layer, a fuel electrode formed on the other  
surface of the electrolyte layer, and a conductive  
separator opposed to the oxygen electrode or fuel  
electrode for defining oxygen-containing gas passages  
or fuel gas passages. The separator includes a plate-like  
portion opposed to and spaced from the oxygen  
electrode or fuel electrode, a pair of strip-shaped  
projections extending along opposite ends of the  
plate-like portion for contacting opposite edges of the  
electrolyte layer, and a plurality of ridges for defining  
gas passages in form of grooves between the pair of  
strip-shaped projections. A fuel cell system includes a  
plurality of such fuel cells stacked one over another in  
a spaced relationship to define fuel gas passages or  
oxygen-containing gas passages in between. A flexible  
conductive element is disposed between an adjacent  
pair of the fuel cells.

**BATTERY MATERIALS**

**5498403**

**METHOD FOR PREPARING HIGH DENSITY  
NICKEL HYDROXIDE USED FOR ALKALI  
RECHARGEABLE BATTERIES**

Shin Dong-Yup Kyunki, REPUBLIC OF KOREA  
assigned to Hyundai Motor Company