Constructing the cell casing having a tubular shape rather than the typical deep drawn can shape, allows access to the lower portion of the stack. There, additional leads are welded to the cell case, which significantly adds to the stability of the stack within the case. The lower portion of the case is then within the case. The lower portion of the case is then hermetically sealed by fitting and welding a disc in place.

5478662

METHOD AND APPARATUS FOR DISPOSING OF WATER AND/OR INERT GAS FROM A FUEL CELL BLOCK

Strasser Karl Erlangen, GERMANY assigned to Siemens Aktiengesellschaft

A method for cathode-side water and inert gas disposal and/or anode-side inert gas disposal from a fuel cell block having a number of fuel cells, includes increasingly concentrating a water and an inert gas component in a cathode-side gas mixture and an inert gas component in an anode-side gas mixture, in flow direction of the gas mixtures. The water and inert gas components are at least partially discharged from the fuel cell block. In an apparatus for performing the method, the fuel cells are subdivided into cell groups through which a flow of gas mixtures can be conducted in parallel. The cell groups include a cell group disposed last as seen in gas mixture flow direction. Lines connect the cell groups for conducting at least a fraction of the gas mixtures successively through the cell groups, and for discharging another fraction of the gas mixtures, being dependent on an electric current, from the fuel cell block after flowing through the last cell group.

5478663

EDGE SEALS FOR MOLTEN CARBONATE FUEL CELL STACKS

Cipollini Ned; Bregoli Lawrence; Maricle Donald L Enfield, CT, UNITED STATES assigned to International Fuel Cells Corporation

The reactant manifolds and corners of a molten carbonate fuel cell stack are sealed with particulate lithium aluminate members which are sufficiently porous so as to resist significant electrolyte migration therethrough. The seal members which are disposed in vertical planes of the stack are preferentially formed from lithium aluminate grains which are bonded together by a silica-free glass binder. The seal members which are disposed in horizontal planes in the stack are preferably formed from lithium aluminate grains which are bonded together by surface hydrolysis. Alumina-clad stainless steel labyrinth seal members are associated with each of the horizontal seal members to inhibit electrolyte migration from the cell electrolyte matrices to the vertical seal members.

5480735

HIGH CURRENT ALKALINE FUEL CELL ELECTRODES

Landsman Douglas A; Plasse Paul A Hartford, CT, UNITED STATES assigned to International Fuel Cells Corporation

Electrodes for an alkaline fuel cell are disclosed. The electrodes include a porous substrate and a catalyst layer supported on the substrate. The catalyst layer includes catalyst particles for catalyzing the electrochemical reaction occurring at the electrode, a hydrophobic binder for providing a network of hydrophobic gas passages communicating with the catalyst particles and hydrophilic catalytically inactive particles for providing a network of liquid transport pathways through the catalyst layer. The liquid transport pathways improve liquid transport through the catalyst layer and electrodes of the present invention provide improved resistance to electrode flooding and electrolyte pumping.

5480736

FUEL CELL GENERATION APPARATUS AND A METHOD FOR STARTING THE SAME

Ujiie Takashi; Ito Makoto Kawasaki, JAPAN assigned to Fuji Electric Co Ltd

A fuel cell generation apparatus including a plurality of fuel cells to be connected in parallel. Each of the fuel cells is connected in parallel with a serial circuit of a starting load and a switch. Each of the parallel circuit