

5645950**PROCESS FOR SUPPLYING AIR TO A FUEL CELL SYSTEM**

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A process and an apparatus control output of an air-breathing fuel cell system which consists of an air supply line, a fuel cell, an air exhaust line, and a separate gas supply system for hydrogen gas. To control the fuel cell output, an adjustable rotary speed compressor is located in the air supply line and a variable absorption capacity expander is located in the air exhaust line. The compressor, the expander, and an additional electric motor are positioned on a common shaft. The expander converts the pressure energy contained in the exhaust air into mechanical energy and delivers that energy via the common shaft to the compressor. The air volume flow is controlled by the compressor rotary speed and adjusted to a preset value. A preset working pressure is established in the fuel cell system by adjusting the absorption capacity of the expander.

5645951**METHOD OF GENERATING ELECTRIC ENERGY FROM BIOLOGICAL RAW MATERIALS**

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A method of generating electric energy from biological raw materials. A biological raw material is used which is substantially free from sulfur of natural origin. A combustion gas is generated from biological raw materials in an oxidation reactor by partial oxidation. An oxygen/biological raw material proportion of ingredients and a gas phase temperature are maintained which ensure a combustible gas virtually free of nitrogen oxides. After removing suspended matter from the combustible gas in a separator, the combustible gas is converted into electric energy in fuel cells having a porous anode, a porous cathode and a suitable electrolyte.

5646852**METHOD AND DEVICE FOR VEHICLE FUEL CELL DYNAMIC POWER CONTROL**

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A method and an apparatus are provided for controlling the power of an electric drive unit in a vehicle. The drive unit is supplied with electrical energy by a fuel cell in the vehicle. On the basis of a power request which is determined from the accelerator pedal position, the air flow rate required to provide the set power from the fuel cell is calculated and set by controlling rotational speed of a compressor arranged in the air intake line to the fuel cell. To prevent the fuel cell from producing more electrical power than the drive unit can absorb, the drive unit acts limits the power request by emitting appropriate error messages. The set value for the power is fed to the drive unit and can be corrected such that the drive unit never demands more power than the amount of power instantaneously produced by the fuel cell to prevent fuel cell collapse.

5648182**FUEL CELL POWER GENERATION SYSTEM**

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A fuel cell power generation system suitable for powering an electric vehicle and which provides high degree of safety when restarting power generation. The system is small in size, light in weight and low in cost of power generation. Three-way valves are provided in an exhaust-passage extending from a fuel-reforming unit and in pipes connecting the fuel-reforming unit, a CO removal unit and a fuel cell and as a gas exhaust valve on an anode side exhaust passage extending from the fuel cell. Accordingly, upon shut down, after exhausting residual reformed gas, combustion exhaust gas from a combustion unit associated with the fuel reforming unit