TECHNO OFFER

Improved stack for PEMFC fuel cell

Keywords : Hydrogen / Renewable energy / Fuel cell / PEMFC / STACK / Micro-Grid

CONTEXT

Improving the maintenance-free life of PEMFC (hydrogen) fuel cells is a recurring issue. Especially for continuous power production applications in Micro-Grid type networks or generator sets isolated from any other power supply solution.

DESCRIPTION

The invention is a new design of the assembly of the elements of the Stack of the fuel cell allowing a better regulation of the temperature of the anodes and cathodes.

The precise thermal regulation allows both to improve the efficiency and to avoid certain degradation phenomena of the active elements of the stack, thus leading to a significant improvement in reliability and an increase in maintenance-free service life.

COMPETITIVE ADVANTAGES

- **Improved electrical performance gains of around 1.5 times in dry gas condition**
- **Clear improvement in durability due to the elimination of the "fuel starvation" phenomenon**
- **Adapted to the individualized control of each cell by setting up a BMS "Battery management system".**
- **Removal of the gas humidifier (= 10% of the price of the stack**

Markets & applications

Fuel cell PEMFC

- Continuous electricity production in isolated environment / Micro-Grid / generators

Development stage

TRL 7, 2 kW demonstrator

Research team

LEMTA – Lorraine University

Intellectual property

Patent granted FR / EP

Target partnership

Patent licensing

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