M.E.G.A. Technology
(Membrane/Electrode Gasket Assembly)

**Features**

The MEGA is realised by drowning the previously prepared MEA in a moulded gasket. A proprietary silicon based liquid mixture is injected directly on the MEA borders.

Gaskets, obtainable in different shapes and hardness grades, are stable in a wide range of temperature (-50 to +180 °C). MEGA technology has been successfully tested up to 6 bar. Industrial production is predicted to be simple and cheap.

**Advantages**

- **Effective PEM saving (cost reduction):** the membrane is not used as a gasket coupling surface, but is only used in the active area.
- **Production time reduced:** the MEGA preparation and its insertion/extraction in the fuel cell stack are quick and easy.
- **Quality control:** the MEGA system can be characterised in a single fuel cell configuration and stored before the utilization in a stack, maintaining its performance.
- **Failed elements substitution:** it is possible to disassemble the stack, replacing only the failed cell. MEGA can be reused several times without any change or decrease in performance.

**Applications**

Small stacks were built with MEGA technology and successfully tested at the ENEA labs. Every MEGA was previously tested, stored and eventually assembled in a stack. The stack performance resulted from the sum of the single cell ones. A stack upgrade is currently in progress.

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