

METHOD FOR EXCLUDING A MALFUNCTIONING ELEMENTARY CELL IN A MEMBRANE ELECTROLYZER OR ELECTROCHEMICAL GENERATOR

Abstract

The invention concerns membrane electrolyzers suitable for processes such as water or hydrogen halides electrolysis, as well as electrochemical generators fed with gases containing hydrogen and oxygen for direct conversion into electric energy. These apparatuses generally consist of a filter-press assembly of conductive bipolar plates (2), electrodes (4), sealing gaskets (5) membranes (6) and internal longitudinal ducts for feeding the reactants and withdrawing the products and residual reactants. The invention is directed to the method for repairing said electrolyzers or generators when an elementary cell is malfunctioning. This method comprises making at least two perforations in the peripheral area of the bipolar plates (2) and/or gaskets (5) of the malfunctioning cell to reach distribution channels (9, 11) which connect the compartments containing the electrodes (4) with said longitudinal ducts. A sealing means (agent) is then injected through the perforations (12) in order to form suitable occlusions (14, 15) in the distributions channels (9, 11) and in the perforations (12) respectively. To facilitate the perforation procedure, the bipolar plate (2) and/or the gaskets (5) may be provided with blind aid-holes in the peripheral area. Upon sealing the distribution channels (9, 11) and the perforations (12), the bipolar plates (2) delimiting the malfunctioning cell are externally short-circuited and the electrolyzer or generator is ready for operation.

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