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(54) Title: ELECTROLYSIS SYSTEM

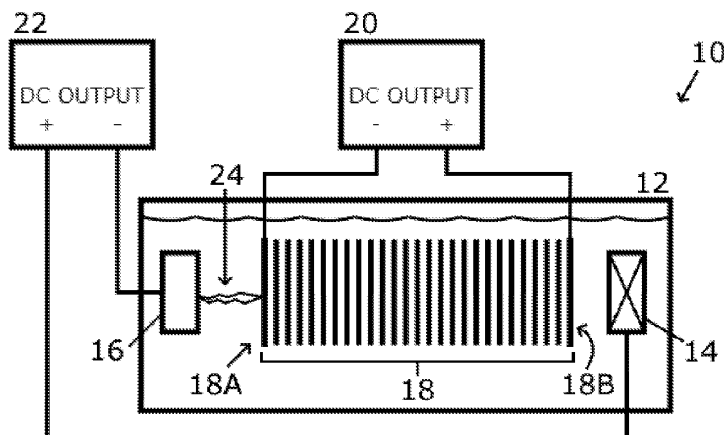


FIGURE 1

(57) Abstract: The present invention relates to an electrolysis system comprising a tank adapted to contain water or an aqueous solution, an electrolytic array comprising electrically conductive plates, a temperature-resistant cathode proximal to, but spaced apart from, a cathodic end of the electrolytic array, a tank anode proximal to, but spaced apart from, an opposing anodic end of the electrolytic array, wherein the cathodic and anodic ends of the electrolytic array are electrically connected to a negative and positive terminal, respectively, of a first power supply adapted to provide direct-current (DC) power thereto, the temperature-resistant cathode and the tank anode are electrically connected to a negative and positive terminal, respectively, of a second power supply adapted to provide DC power thereto and at least the temperature-resistant cathode is adapted to generate a plasma arc within the water or aqueous solution between an end thereof and a closest plate of the electrolytic array.

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