

Title (en)
HIGH ELECTRIC FIELD ELECTROLYSIS CELL

Title (de)
ELEKTROLYSEZELLE MIT HOCHELEKTRISCHEM FELD

Title (fr)
CELLULE D'ELECTROLYSE A CHAMP ELECTRIQUE ELEVE

Publication
EP 1613793 A1 20060111 (EN)

Application
EP 03816188 A 20030304

Priority
US 0306601 W 20030304

Abstract (en)
[origin: WO2004079051A1] A High Electric Field Electrolysis (HEFE) cell is provided for electrolyzing water to transform it into Free Radical Solution (FRS) water for cleaning, deodorizing, and sterilizing. The HEFE cell is comprised of a pair of flat electrodes attached (or coated) onto a flat proton ion exchange membrane enclosed in a corresponding structure that accommodates the electrodes and the proton ion exchange membrane. The structure is comprised of at least one inlet channel for receiving purified water and two outlet channels for output of electrolyzed FRS water and hydrogen rich water. The HEFE cell further provides a mechanism for recycling of hydrogen rich water for re-use or electric power generation. The quantity and the quality of FRS water production is controlled with an external control circuit that automatically monitors and maintains appropriate parameter values for the production of FRS water.

IPC 1-7
C25B 9/00; **C25C 7/00**; **C25D 17/00**; **B23H 11/00**

IPC 8 full level
C02F 1/461 (2006.01); **C02F 1/467** (2006.01); **C25B 9/10** (2006.01); **C25B 9/23** (2021.01)

CPC (source: EP US)
C02F 1/4618 (2013.01 - EP US); **C02F 1/4672** (2013.01 - EP US); **C25B 9/23** (2021.01 - EP US); **C02F 1/20** (2013.01 - EP US); **C02F 1/46109** (2013.01 - EP US); **C02F 2001/46152** (2013.01 - EP US); **C02F 2201/46115** (2013.01 - EP US); **C02F 2201/4612** (2013.01 - EP US); **C02F 2209/02** (2013.01 - EP US); **C02F 2209/04** (2013.01 - EP US); **C02F 2209/06** (2013.01 - EP US); **C02F 2209/40** (2013.01 - EP US); **C02F 2305/023** (2013.01 - EP US)

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)
WO 2004079051 A1 20040916; AU 2003225659 A1 20040928; CN 1780938 A 20060531; EP 1613793 A1 20060111; EP 1613793 A4 20070808; JP 2006519090 A 20060824; JP 4392354 B2 20091224; US 2007017801 A1 20070125; US 2009266706 A1 20091029

DOCDB simple family (application)
US 0306601 W 20030304; AU 2003225659 A 20030304; CN 03826069 A 20030304; EP 03816188 A 20030304; JP 2004569170 A 20030304; US 46402309 A 20090511; US 54753106 A 20060731