

Title (en)
FREEZE TOLERANT FUEL CELL SYSTEM AND METHOD

Title (de)
FROSTTOLERANTE BRENNSTOFFZELLE UND VERFAHREN ZUM BETREIBEN EINER SOLCHEN BRENNSTOFFZELLE

Title (fr)
DISPOSITIF DE PILE A COMBUSTIBLE SUPPORTANT LE GEL ET PROCEDE D'EXPLOITATION DE CE SYSTEME

Publication
EP 1216489 A1 20020626 (EN)

Application
EP 00928326 A 20000424

Priority
• US 0010949 W 20000424
• US 13080199 P 19990423

Abstract (en)
[origin: WO0065676A1] A freeze tolerant fuel cell system and method of operating the freeze tolerant fuel cell system is disclosed. The freeze tolerant fuel cell system is realized by separating the coolant loop [25] from the active membrane [12] through the use of gaskets [20, 21] interposed between the collector cell plates [18, 19]. A method of operating the freeze tolerant fuel cell system is disclosed which comprises flowing a coolant fluid other than pure water having a sufficiently low freezing point through the coolant loop [25]. A method for startup and shutdown of the freeze tolerant fuel cell system is also disclosed.

IPC 1-7
H01M 8/00

IPC 8 full level
H01M 8/00 (2006.01); **H01M 8/02** (2006.01); **H01M 8/04** (2006.01); **H01M 8/10** (2006.01); **H01M 8/24** (2006.01)

CPC (source: EP US)
H01M 8/0258 (2013.01 - EP US); **H01M 8/0267** (2013.01 - EP US); **H01M 8/0271** (2013.01 - EP US); **H01M 8/04029** (2013.01 - EP); **H01M 8/04074** (2013.01 - EP); **H01M 8/04223** (2013.01 - EP); **H01M 8/04225** (2016.02 - EP); **H01M 8/04228** (2016.02 - EP US); **H01M 8/04302** (2016.02 - EP US); **H01M 8/04303** (2016.02 - EP US); **H01M 8/241** (2013.01 - EP US); **H01M 8/04156** (2013.01 - EP); **H01M 2300/0082** (2013.01 - EP); **Y02E 60/50** (2013.01 - EP)

Citation (search report)
See references of WO 0065676A1

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
WO 0065676 A1 20001102; AU 4658000 A 20001110; CA 2371257 A1 20001102; CN 1353869 A 20020612; EP 1216489 A1 20020626; JP 2002543566 A 20021217; MX PA01010724 A 20020514

DOCDB simple family (application)
US 0010949 W 20000424; AU 4658000 A 20000424; CA 2371257 A 20000424; CN 00808391 A 20000424; EP 00928326 A 20000424; JP 2000614524 A 20000424; MX PA01010724 A 20000424