

Title (en)
BIPOLAR COLLECTOR FOR FUEL CELL

Title (de)
BIPOLARER STROMKOLLEKTOR FÜR BRENNSTOFFZELLE

Title (fr)
COLLECTEUR BIPOLAIRE POUR PILE A COMBUSTIBLE

Publication
EP 1110262 A1 20010627 (FR)

Application
EP 98947627 A 19981008

Priority
• FR 9802149 W 19981008
• FR 9809236 A 19980721

Abstract (en)
[origin: FR2781606A1] A bipolar collector for a solid polymer electrolyte fuel cell, having metal cylinders which extend through a polymer plate into the electrodes, is new. A bipolar collector, for a solid polymer electrolyte fuel cell, is traversed perpendicularly by uniformly distributed metal cylinders which project into the electrodes and which are spaced apart by a minimal distance of 2-4 mm, sealing between the collector faces being ensured by a polymer plate in which the cylinders are inserted symmetrically. Preferred Features: The polymer plate may have fluid transport channels on its two faces, in which case the cylinders are positioned in relief portions between the channels to create a square or rectangular distribution pattern. Alternatively, the polymer plate is free from fluid transport channels but may have studs for spacing the electrodes from its surface, in which case the cylinders are positioned to create an equilateral triangular pattern. The space is filled with a fluid transporting and distributing macroporous structure consisting of a metal or alloy, having its exposed surface coated with a corrosion protective film having hydrophobic properties to facilitate water evacuation, or of a polymer. The metal cylinders are 0.1-0.3 mm diameter stainless steel cylinders which project by 0.1-0.3 mm from the polymer plate, the projecting portions being covered with a cathodically deposited thin film of precious metal such as gold or a platinum group metal. The metal cylinders are inserted during moulding of the polymer plate or are inserted into the molded polymer plate by a mechanical operation such as riveting or stitching with a stainless steel wire.

IPC 1-7
H01M 8/02

IPC 8 full level
C25D 5/06 (2006.01); **C25D 5/26** (2006.01); **C25D 7/00** (2006.01); **H01M 8/02** (2006.01); **H01M 8/10** (2006.01)

CPC (source: EP KR US)
H01M 8/02 (2013.01 - KR); **H01M 8/0221** (2013.01 - EP US); **H01M 8/0228** (2013.01 - EP US); **H01M 8/0232** (2013.01 - EP US); **H01M 8/0239** (2013.01 - EP US); **H01M 8/0256** (2013.01 - EP US); **H01M 2300/0082** (2013.01 - EP US); **Y02E 60/50** (2013.01 - EP)

Citation (search report)
See references of WO 0005775A1

Designated contracting state (EPC)
CH DE ES FR GB IT LI

DOCDB simple family (publication)
FR 2781606 A1 20000128; **FR 2781606 B1 20001013**; CA 2337319 A1 20000203; EP 1110262 A1 20010627; JP 2002521797 A 20020716; KR 20010074686 A 20010809; US 2001006745 A1 20010705; WO 0005775 A1 20000203

DOCDB simple family (application)
FR 9809236 A 19980721; CA 2337319 A 19981008; EP 98947627 A 19981008; FR 9802149 W 19981008; JP 2000561670 A 19981008; KR 20017000332 A 20010109; US 76096001 A 20010116