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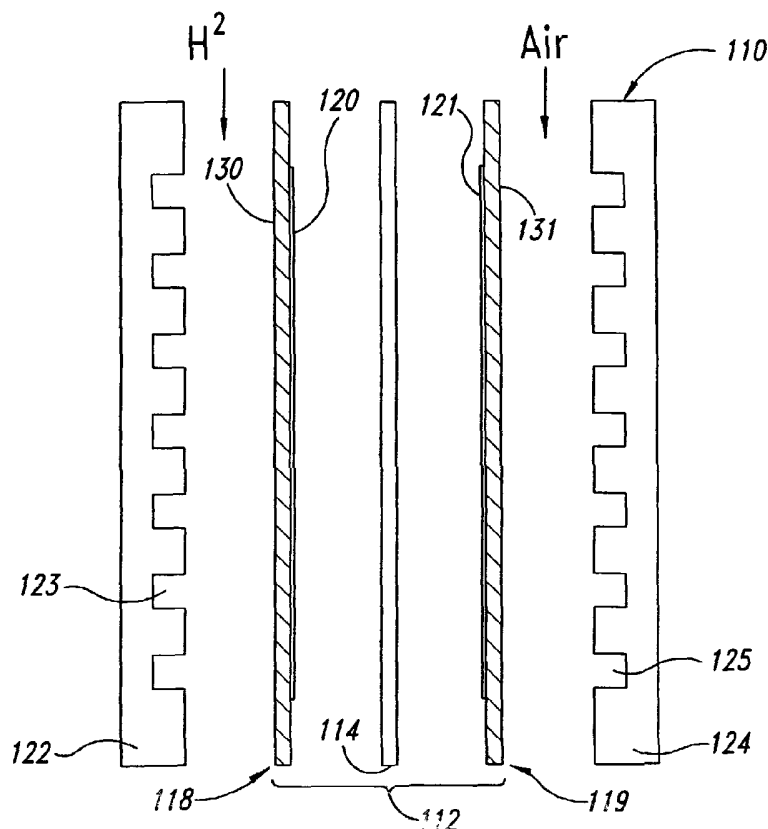
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(54) Title: ELECTROCHEMICAL FUEL CELL WITH FLUID DISTRIBUTION LAYER HAVING NON-UNIFORM PERMEABILITY



(57) Abstract: An electrochemical fuel cell (110) comprises an anode electrocatalyst layer (120), a cathode electrocatalyst layer (121), a polymer electrolyte membrane (114) interposed between the anode and cathode electrocatalyst layers, an anode flow field plate (122), a cathode flow field plate (124), an anode fluid distribution layer (130) interposed between the anode flow field plate (122) and the anode electrocatalyst layer (120), and a cathode fluid distribution layer (131) interposed between the cathode flow field plate (124) and the cathode electrocatalyst layer (121), wherein at least one of the anode and cathode fluid distribution layers decreases in permeability from an inlet to an outlet of the electrochemical fuel cell. Methods for making a substantially fluid impermeable sheet material having a non-uniform pattern of perforations are also provided.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01M8/10 H01M8/02 H01M8/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, COMPENDEX, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/039876 A1 (KNIGHTS SHANNA DENINE ET AL) 27 February 2003 (2003-02-27) the whole document	1-15
A	-----	16-20
X	US 6 521 369 B1 (MERCURI ROBERT ANGELO ET AL) 18 February 2003 (2003-02-18) cited in the application figures 6,4,4a column 2, paragraph 5 column 4, paragraph 1 column 8, paragraph 4 - column 10, paragraph 1	16-20
A	column 12, paragraph 2 -----	1-15
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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