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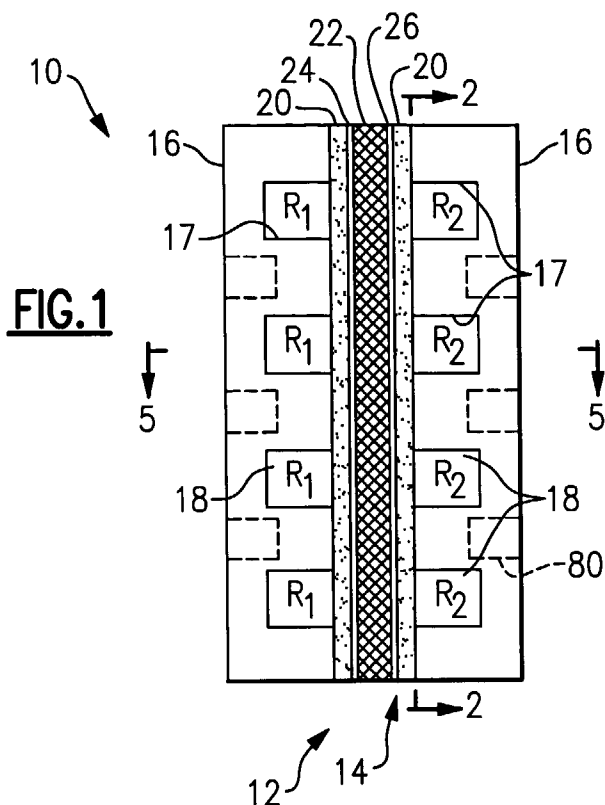
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(54) Title: STABILIZED FUEL CELL FLOW FIELD



(57) Abstract: A fuel cell (10) includes a cathode catalyst (26) for receiving a first reactant and an anode catalyst (24) for receiving an expected amount of a second reactant. The cathode catalyst (26) and the anode catalyst (24) respectively catalyze the first reactant and the second reactant to produce an electrochemical reaction that generates a flow of electrons between the cathode catalyst (26) and the anode catalyst (24). The amount of the first reactant consumed in the electrochemical reaction corresponds to a threshold amount of the second reactant needed to generate a forward flow of the electrons from the anode catalyst (24) to the cathode catalyst (26). A portion (42) of a fuel cell flow field includes a feature (54, 60, 80,  $W_1$ ,  $D_1$ ) that restricts consumption of the first reactant.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 05/47675

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(8) - H01M 8/00 (2008.04) USPC - 439/13 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) USPC: 439/13 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched None Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST(USPT,PGPB,EPAB,JPAB); Google Search Terms: fuel, cell, cloth, ionomer, barrier, layer, consumption, cooler, threshold, temperature, restrict, filler, gradient, catalyst		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X - Y	US 6,756,142 B2 (MUTHUSWAMY et al.) 29 June 2004 (29.06.2004), entire document especially Abstract; Fig 2; col 1, lns 28-50, col 3, lns 43-67	1, 7, and 11 ----- 2-6, 8-10, and 12-20
Y	US 6,555,261 B1 (LEWINSKI et al.) 29 April 2003 (29.04.2003), entire document especially col 2, lns 20-28; col 4, lns 3-14; col 7, lns 1-20	2-4, 6, 9-10, and 12-20
Y	US 2005/0221152 A1 (TURPIN et al.) 06 October 2005 (06.10.2005), entire document especially paras [0010] and [0022]	5 and 15
Y	US 6,673,480 B1 (WILKINSON et al.) 06 January 2004 (06.01.2004), entire document especially (col 4, lns 14-28).	8
Y	US 2004/0062979 A1 (BECKMANN et al.) 01 April 2004 (01.04.2004), entire document especially para [0046]	9-10 and 20
A	US 6,558,827 B1 (REISER) 06 May 2003 (06.05.2003), entire document	1-20
A	US 6,569,518 B2 (YADAV et al.) 27 May 2003 (27.05.2003), entire document	1-20
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
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