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[Continued on next page]

(54) Title: THICK ELECTRODE DIRECT REACTION FUEL CELLS UTILIZING CROSS-FLOWS AND TAYLOR VORTEX FLOWS

(57) Abstract: Direct reaction fuel cells (10) with cross-flow of an electrolyte mixture through thick, porous electrodes (12, 18) that contain a mixture of catalyst particles and that rotate to generate Taylor Vortex Flows (54) and Circular Couette Flows (56) in electrolyte chambers (24) are disclosed.

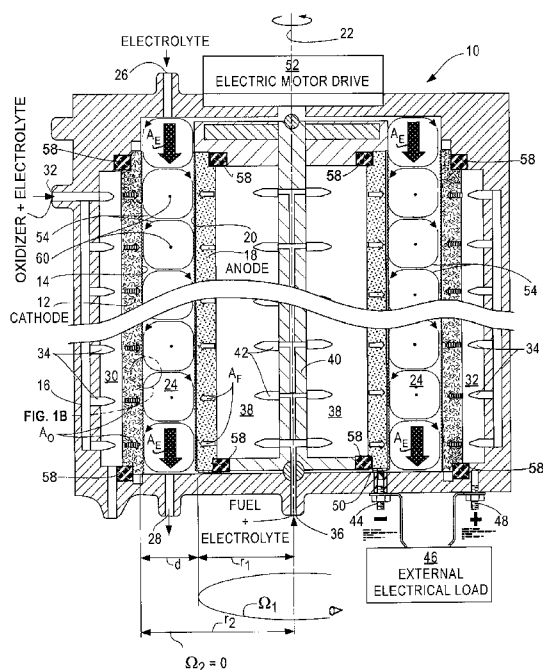


FIG. 1A





**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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**A. CLASSIFICATION OF SUBJECT MATTER****H01M 8/02(2006.01)i, H01M 8/18(2006.01)i, H01M 8/04(2006.01)i, H01M 4/86(2006.01)i**

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

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

H01M 8/02; H01M 8/06; H01M 4/36; B01F 7/12; C08F 2/00; H01M 8/00; B01J 19/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: , ,

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5830593A A (NIELSON, JAY P.) 03 November 1998 See abstract, column 5, lines 61 to 64, claims 1 and 2 and 4 and 10.	1-14
A	US 2010-0003545 A1 (HORNE CRAIG RICHARD et al.) 07 January 2010 See abstract, paragraphs [0036] and [0041]	1-14
A	US 2006-0062702 A1 (HAGEMEISTER, EDELTRAUD. et al.) 23 March 2006 See abstract, Figure 1, paragraphs [0001] to [0003], [0042], [0096], [0098], claims 1 and 9	1-14
A	US 6471392 B1 (HOLL, RICHARD A. et al.) 29 October 2002 See abstract, Figure 5, column 3, lines 27 to 42, column 5, lines 21 to 26, claim 1	1-14

 Further documents are listed in the continuation of Box C. See patent family annex.

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