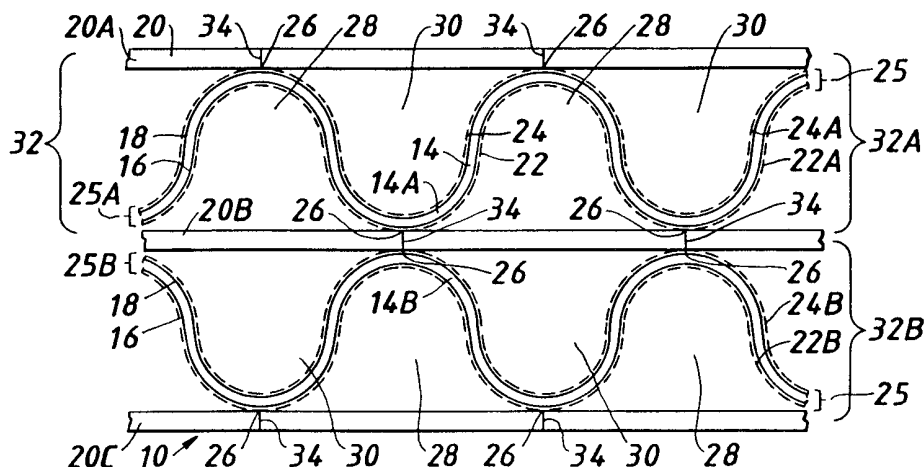




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(21) International Application Number: PCT/GB99/02133 (22) International Filing Date: 1 July 1999 (01.07.99) (30) Priority Data: 9814123.7 1 July 1998 (01.07.98) GB (71) Applicant (for all designated States except US): BG PLC [GB/GB]; 100 Thames Valley Park Drive, Reading, Berkshire RG6 1PT (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): MCLEAN, Gerard, Francis [CA/CA]; 4077 Ebony Terrace, Victoria, British Columbia V8N 3Z2 (CA). REID, Christopher, Edwin, John [CA/CA]; 2-1258 Balmoral Road, Victoria, British Columbia V8T 1B3 (CA). DJILALI, Ned [CA/CA]; 2110 Wenman Drive, Victoria, British Columbia V8N 2S2 (CA). CRANE, Patricia [CA/CA]; 7246 Skyline Crescent, Saanichton, British Columbia V8M 1M4 (CA). (74) Agent: MORGAN, David, J.; BG plc, Intellectual Property Dept., 100 Thames Valley Park Drive, Reading, Berkshire RG6 1PT (GB).		(81) Designated States: AU, CA, CN, IN, JP, KR, SG, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 13 April 2000 (13.04.00)

(54) Title: ELECTROCHEMICAL FUEL CELL HAVING AN UNDULATE MEMBRANE ELECTRODE ASSEMBLY

**(57) Abstract**

A PEM-type fuel cell is formed from layered undulate MEA structures (25) and separator strata (20) alternating with each other in the stack dimension so that each layered MEA structure is disposed between and attached to an associated pair of separator strata so as to form at least one discrete plenum on each side of each layered MEA structure through which plenum reactant gas may be circulated. Each layered MEA structure is formed from proton exchange membrane material (14) sandwiched between a pair of spaced-apart current collectors (22, 24) with electro-catalyst particles between the membrane material and each current collector so that the membrane material and electro-catalyst particles fill the space between the current collectors, forming together with the current collectors a layered MEA structure. Each separator stratum is attached to and provides an electrically conductive path between the current collectors of the layered MEA structures on either side of the separator stratum.

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INTERNATIONAL SEARCH REPORT

Intern: al Application No

PCT/GB 99/02133

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

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)

IPC 7 H01M

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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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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INTERNATIONAL SEARCH REPORT

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