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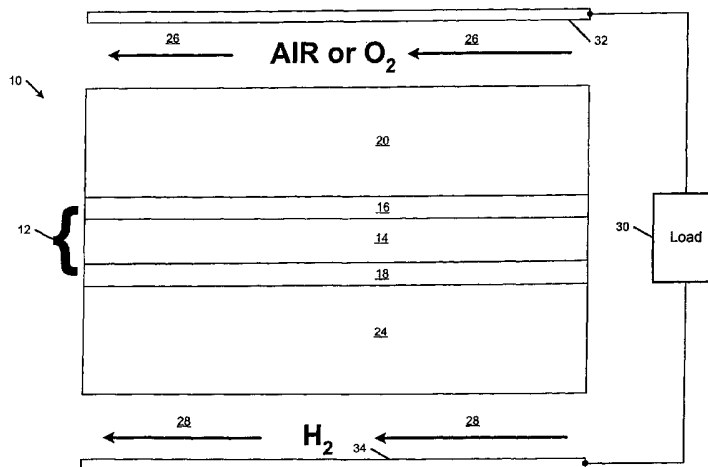
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[Continued on next page]

(54) Title: CONTROL SYSTEM AND METHOD FOR STARTING A FROZEN FUEL CELL



(57) Abstract: A method for starting a frozen fuel cell stack includes discontinuing reactant humidification before shutting down the fuel cell stack. The anode and cathode are purged with the dry reactants. The fuel cell stack is soaked at freezing temperatures. During subsequent startup, dry reactants are initially delivered. An outlet temperature of the anode and a current load of the fuel cell stack are measured. The dry reactants are shut off when the temperature of the anode outlet or the current load reach predetermined values. The open circuit voltage potential of the fuel cells is monitored and compared to a first voltage value. When the open circuit voltage exceeds the first value, the fuel cell stack begins supplying current load. The current load of the fuel cell stack is increased or decreased based on a difference between the minimum voltage and a second voltage value.

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**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

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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) U.S. : 429/12, 30, 34		
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 practicable, search terms used) EAST		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,358,637 B1 (FUSS) 19 March 2002 (19.03.2002), column2, lines 30-68.	1-20
Y	US 2002/0009623 A1 (ST-PIERRE et al) 24 January 2002 (24.01.2002), column 3, lines 40-68.	1-20
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
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