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(71) Applicant (for all designated States except US): **UNIVERSITY OF SOUTH CAROLINA** [US/US]; 109 Osborne Administration Bldg, Columbia, South Carolina 29208 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WEIDNER, John W.** [US/US]; 313 Brook Hollow Drive, Columbia, South Carolina 29229 (US). **HOLLAND, Charles E.** [US/US]; 607 Granby Crossing, Cayce, South Carolina 29033 (US).

(74) Agent: **BATAVIA, Neil M.**; Dority & Manning, P.A., P.O. Box 1449, Greenville, South Carolina 29602 (US).

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(54) Title: PRODUCTION OF LOW TEMPERATURE ELECTROLYTIC HYDROGEN

(57) Abstract: In one embodiment of the present disclosure, a process for electrochemical hydrogen production is provided. The process includes providing an electrochemical cell with an anode side including an anode, a cathode side including a cathode, and a membrane separating the anode side from the cathode side. The process further includes feeding molecules of at least one gaseous reactant to the anode, oxidizing one or more molecules of the gaseous reactant at the anode to produce a gas product and protons, passing the protons through the membrane to the cathode, and reducing the protons at the cathode to form hydrogen gas.



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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/13558

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: **C25B 1/02**( 2006.01)

USPC: 205/637

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. : 205/637

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,412,895 A (LU) 01 November 1983 (01.11.1983), abstract, Figure 1, column 2, line 19 to column 5, line 15.	1-3, 8, 14-16
X	US 4,059,496 A (SCHULTEN et al) 22 November 1977 (22.11.1977), Figure, column 1, line 4 to column 4, line 2.	1-8 and 11-20
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Y		9-10
X	US 4,192,726 A (PANGBORN et al) 11 March 1980 (11.03.1980), Figure 1, column 3, line 10 to column 6, line 34.	1-8, 11-20
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Y		9-10
X	US 4,332,650 A (FOH et al) 01 June 1982 (01.06.1982), Figure 1, column 2, line 48 to column 8, line 2.	1-8, 11-20
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Y		9-10

Further documents are listed in the continuation of Box C.

See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
Facsimile No. (571) 273-3201

Authorized officer

Harry D. Wilkins III

Telephone No. (571)-272-1251



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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/0070124 A1 (ANDREWS et al) 13 June 2002 (13.06.2002), paragraph [0059].	9-10