

(43) International Publication Date
22 September 2011 (22.09.2011)(10) International Publication Number
WO 2011/116236 A2

(51) International Patent Classification: <i>H01M 8/22</i> (2006.01)	61/413,243	12 November 2010 (12.11.2010)	US
	61/419,590	3 December 2010 (03.12.2010)	US
(21) International Application Number: PCT/US2011/028889	61/425,105	20 December 2010 (20.12.2010)	US
	61/430,814	7 January 2011 (07.01.2011)	US
(22) International Filing Date: 17 March 2011 (17.03.2011)	61/437,377	28 January 2011 (28.01.2011)	US
	61/442,015	11 February 2011 (11.02.2011)	US
	61/449,474	4 March 2011 (04.03.2011)	US
(25) Filing Language:	English	(71) Applicant (for all designated States except US):	
(26) Publication Language:	English	BLACKLIGHT POWER, INC. [US/US]; 493 Old Trenton Road, Cranbury, NJ 08512 (US).	
(30) Priority Data:		(72) Inventor; and	
61/315,186	18 March 2010 (18.03.2010)	US	
61/317,176	24 March 2010 (24.03.2010)	US	
61/329,959	30 April 2010 (30.04.2010)	US	
61/332,526	7 May 2010 (07.05.2010)	US	
61/347,130	21 May 2010 (21.05.2010)	US	
61/356,348	18 June 2010 (18.06.2010)	US	
61/358,667	25 June 2010 (25.06.2010)	US	
61/363,090	9 July 2010 (09.07.2010)	US	
61/365,051	16 July 2010 (16.07.2010)	US	
61/369,289	30 July 2010 (30.07.2010)	US	
61/371,592	6 August 2010 (06.08.2010)	US	
61/373,495	13 August 2010 (13.08.2010)	US	
61/377,613	27 August 2010 (27.08.2010)	US	
61/383,929	17 September 2010 (17.09.2010)	US	
61/389,006	1 October 2010 (01.10.2010)	US	
61/393,719	15 October 2010 (15.10.2010)	US	
61/408,384	29 October 2010 (29.10.2010)	US	
		(75) Inventor/Applicant (for US only): MILLS, Randell, L. [US/US]; 27 Rosedale Road, Princeton, NJ 08540 (US).	
		(74) Agent: SWEET, Mark, D. ; Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, 901 New York Avenue, NW, Washington, DC 20001-4413 (US).	
		(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.	

[Continued on next page]

(54) Title: ELECTROCHEMICAL HYDROGEN-CATALYST POWER SYSTEM

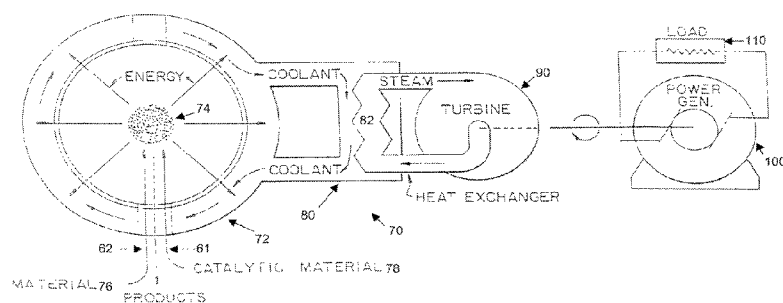


Fig. 1

(57) Abstract: An electrochemical power system is provided that generates an electromotive force (EMF) from the catalytic reaction of hydrogen to lower energy (hydrino) states providing direct conversion of the energy released from the hydrino reaction into electricity, the system comprising at least two components chosen from: a catalyst or a source of catalyst; atomic hydrogen or a source of atomic hydrogen; reactants to form the catalyst or source of catalyst and atomic hydrogen or source of atomic hydrogen, and one or more reactants to initiate the catalysis of atomic hydrogen. The electrochemical power system for forming hydrinos and electricity can further comprise a cathode compartment comprising a cathode, an anode compartment comprising an anode, optionally a salt bridge, reactants that constitute hydrino reactants during cell operation with separate electron flow and ion mass transport, and a source of hydrogen. Due to oxidation-reduction cell half reactions, the hydrino-producing reaction mixture is constituted with, the migration of⁺ electrons through an external circuit and ion mass transport through a separate path such as the electrolyte to complete an electrical circuit. A power source and hydride reactor is further provided that powers a power system comprising (i) a reaction cell for the catalysis of atomic hydrogen to form hydrinos, (ii) a chemical fuel mixture comprising at least two components chosen from: a source of catalyst or catalyst; a source of atomic hydrogen or atomic hydrogen, reactants to form the source of catalyst or catalyst and a source of atomic hydrogen or atomic hydrogen; one or more reactants to initiate the catalysis of atomic hydrogen; and a support to enable the catalysis, (iii) thermal systems for reversing an exchange reaction So thermally regenerate the fuel from the reaction products, (iv) a heat sink that accepts the heat from the power-producing reactions, and (v) a power conversion system.



(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

- 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))

Published:

- without international search report and to be republished upon receipt of that report (Rule 48.2(g))

Declarations under Rule 4.17: