

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 November 2005 (17.11.2005)

PCT

(10) International Publication Number
WO 2005/108289 A3

(51) International Patent Classification⁷: **C01C 1/08**,
C07C 277/00

(21) International Application Number:
PCT/US2005/015920

(22) International Filing Date: 3 May 2005 (03.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/568,551 5 May 2004 (05.05.2004) US
60/572,677 20 May 2004 (20.05.2004) US
60/579,904 15 June 2004 (15.06.2004) US
60/584,707 30 June 2004 (30.06.2004) US

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicants and

(72) Inventors: **GRAUPNER, Robert, K.** [US/US]; 21465 NW Coffey Lane, Hillsboro, OR 97124-8173 (US). **HULTINE, J., Dustin** [US/US]; 3430 SE 10th Avenue, Portland, OR 97202 (US). **VAN VECHTEN, James, Alden** [US/US]; 915 South Skyland Drive, Lake Oswego, OR 97034 (US).

(74) Agents: **JOHNSON, Alexander, C., Jr.** et al.; Marger Johnson, McCollom, P.C., 1030 S.W. Morrison Street, Portland, OR 97205 (US).

Published:

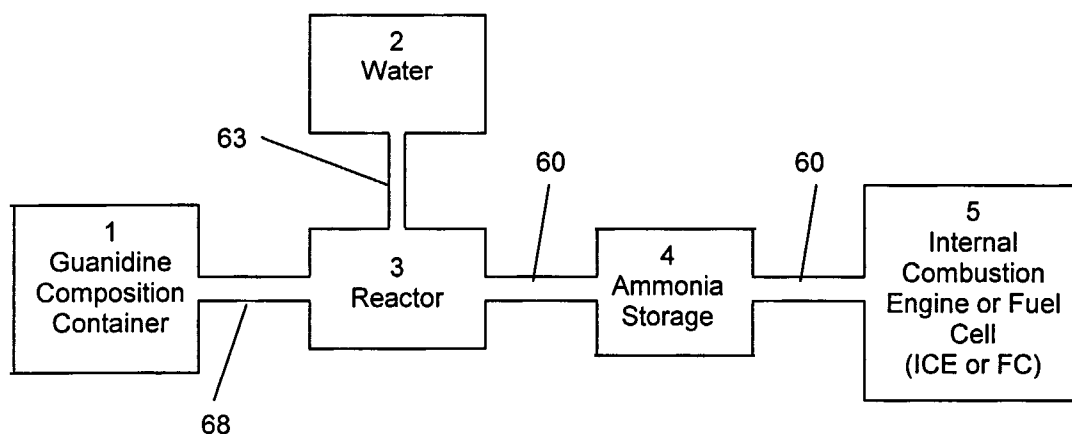
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
5 January 2006

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: GUANIDINE BASED COMPOSITION AND SYSTEM FOR SAME



(57) Abstract: A method and apparatus for generating energy from a composition containing guanidine and a method for providing the composition containing guanidine. The apparatus includes a container such as tank (1) for providing the composition, and a container such as tank (2) for providing water. The composition is delivered from tank (1) to a container such as reactor (3) for reacting the guanidine composition with water, supplied from tank (2), to form ammonia. The apparatus may also include buffer tank (4) for storing the ammonia produced by the reactor. The ammonia produced from the reactor of the guanidine composition with water is delivered from the buffer tank (4) to a container such as chamber (5) for oxidizing ammonia to form water and nitrogen generating energy