



- (51) **International Patent Classification:**
C01B 3/02 (2006.01) **C07H 1/00** (2006.01)
A61P 31/00 (2006.01)

(21) **International Application Number:**
PCT/US2012/026363

(22) **International Filing Date:**
23 February 2012 (23.02.2012)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
13/103,922 9 May 2011 (09.05.2011) US

(71) **Applicant (for all designated States except US):** **COOL PLANET BIOFUELS, INC.** [US/US]; 460 Calle San Pablo, Camarillo, CA 93012 (US).

(72) **Inventors; and**

(75) **Inventors/Applicants (for US only):** **CHEIKY, Michael** [US/US]; 3302 Bordero Lane, Thousand Oaks, CA 93012 (US). **MALYALA, Rajashekharam** [US/US]; 494 Vista Del Sol, Camarillo, CA 93010 (US). **SILLS, Ronald, A.** [US/US]; 12423 Sumerland Ridge Lane, Houston, TX 77041 (US).

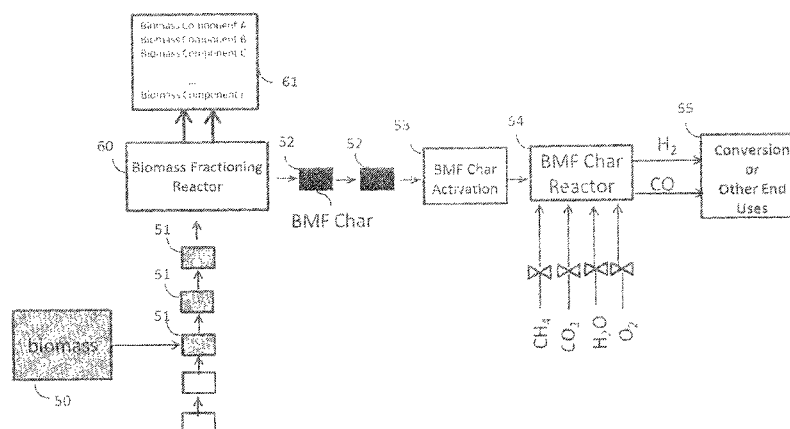
(74) **Agent:** **HEISEY, David, E.;** Sheppard Mullin Richter & Hampton LLP, 12275 El Camino Real, Suite 200, San Diego, CA 92130 (US).

(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, QA, RO, RS, RU, RW, 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.

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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).

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

(54) Title: PROCESS FOR BIOMASS CONVERSION TO SYNTHESIS GAS



2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030

(S7) Abstract: Biomass is processed through a biomass fractioning system that creates, through the application of selective temperature ramps and pressure shocks, a series of useful volatile components and BMF char, wherein the BMP char is reacted sacrificially with any one stream of methane, carbon dioxide, steam or oxygen to create highly pure synthesis gas with a controllable range of compositions. The resulting synthesis gas may be used in any desired manner, including conversion to oxygenates such as methanol and dimethyl ether, and to hydrocarbons.