



(51) International Patent Classification: <i>H01J 37/32</i> (2006.01)			62/823,484 16/752,689	25 March 2019 (25.03.2019) 26 January 2020 (26.01.2020)	US US
(21) International Application Number: PCT/US2020/020556			(71) Applicant: RECARBON, INC. [US/US]; 3350 Scott Blvd. Bldg. 16, Santa Clara, California 95054 (US).		
(22) International Filing Date: 29 February 2020 (29.02.2020)			(72) Inventors: MCCLELLAND, Stefan Andrew ; 1441 Hester Ave., San Jose, California 95126 (US). LEONARD III, George Stephen ; 461 24th St, Apt 16, Oakland, California 94612 (US). KOO, Jae Mo ; 4157 El Camino Way #G, Palo Alto, California 94306 (US).		
(25) Filing Language:			English		
(26) Publication Language:			English		
(30) Priority Data:			(74) Agent: PARK, Chung Sik ; P.O. Box 62312, Sunnyvale, California 94088-2312 (US).		
62/823,436	25 March 2019 (25.03.2019)	US	(81) Designated States (<i>unless otherwise indicated, for every kind of national protection available</i>): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,		
62/823,492	25 March 2019 (25.03.2019)	US			
62/823,505	25 March 2019 (25.03.2019)	US			
62/823,508	25 March 2019 (25.03.2019)	US			
62/823,514	25 March 2019 (25.03.2019)	US			
62/823,517	25 March 2019 (25.03.2019)	US			

(54) Title: PLASMA REACTOR FOR PROCESSING GAS

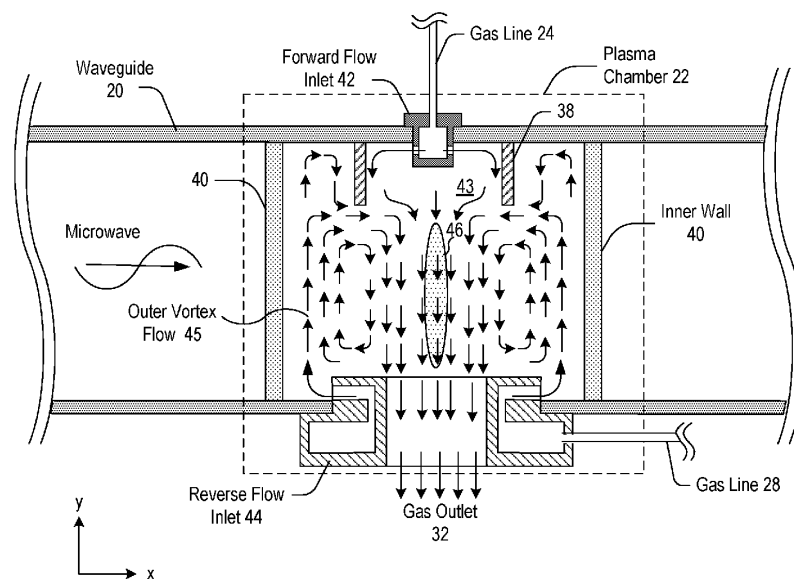


FIG. 2

(57) **Abstract:** The present invention provides a plasma generating system (10) that includes: a waveguide (20) for transmitting a microwave energy therethrough; an inner wall (40) disposed within the waveguide (20) to define a plasma cavity, wherein a plasma (46) is generated within the plasma cavity using the microwave energy; a first gas inlet (44) mounted on a first side of the waveguide (20) and configured to introduce a first gas into the plasma cavity and generate a first vortex flow (45) within the plasma cavity using the first gas, the first gas inlet (44) having a hole (32) through which a gas processed by the plasma (46) exits the plasma cavity; and a plasma stabilizer (38) having a shape of a circular hollow cylinder and installed on a second side of the waveguide (20), an axial direction of the plasma stabilizer (38) being in parallel to a rotational axis of the first vortex flow (45).

[Continued on next page]

HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

- *with international search report (Art. 21(3))*