

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
31 May 2007 (31.05.2007)

PCT

(10) International Publication Number
WO 2007/062001 A2

(51) International Patent Classification:
F02B 31/00 (2006.01)

(21) International Application Number:
PCT/US2006/044996

(22) International Filing Date:
21 November 2006 (21.11.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/285,810 23 November 2005 (23.11.2005) US

(71) Applicant (for all designated States except US): **THE BOC GROUP, INC.** [US/US]; 575 Mountain Avenue, Murray Hill, NJ 07974 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **AITCHISON, Kenneth, Allen** [US/US]; 804 Lilac Way, Los Gatos, CA 95032 (US).

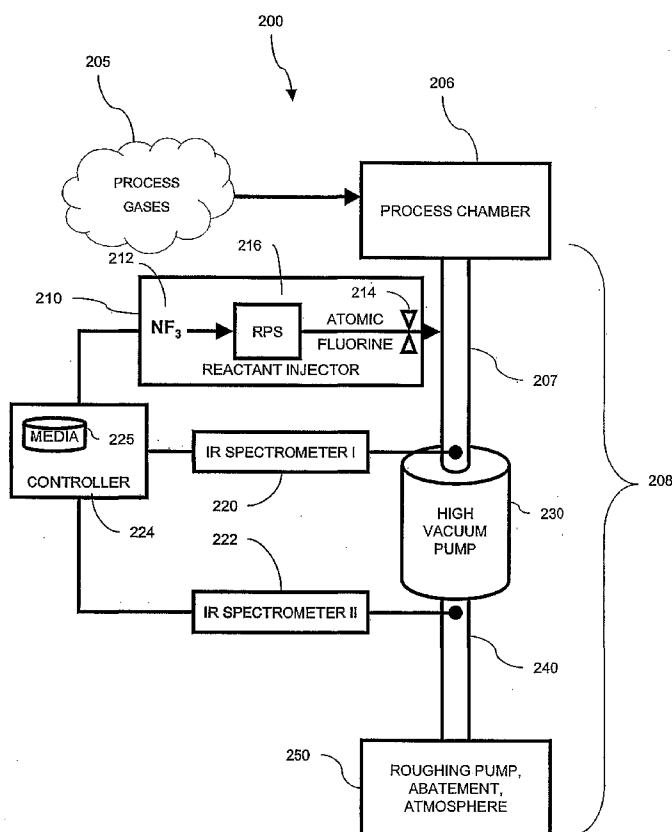
(74) Agent: **ZEBRAK, Ira, Lee**; The BOC Group, Inc., 575 Mountain Avenue, Murray Hill, NJ 07974 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, 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, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, 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, LV, 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).

[Continued on next page]

(54) Title: USE OF SPECTROSCOPIC TECHNIQUES TO MONITOR AND CONTROL REACTANT GAS INPUT INTO A PRE-PUMP REACTIVE GAS INJECTION SYSTEM



(57) Abstract: The present invention relates to vacuum processing systems in which process gases are introduced in a process chamber and are exhausted through a vacuum processing system exhaust path. Deposits made by the exhausted gas are reduced or eliminated by introducing a reactive gas upstream of the device affected by deposits. The amount of introduced reactive gas is controlled by measuring gas phase concentrations of exhausted gas components upstream and downstream of the affected device, and, from those measurements, determining whether the components are being consumed in deposits on the affected device.



Published:

— without international search report and to be republished upon receipt of that report

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.