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(21) International Application Number: PCT/US98/13587 (22) International Filing Date: 7 July 1998 (07.07.98) (30) Priority Data: 08/890,926 10 July 1997 (10.07.97) US (71) Applicant: L'AIR LIQUIDE SOCIETE ANONYME POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE [FR/FR]; 75, quai d'Orsay, F-75321 Paris Cedex 07 (FR). (72) Inventors: MCANDREW, James, J., F.; 15425 Purley Court, Lockport, IL 60441 (US). INMAN, Ronald, S.; 4540 Warsaw Avenue, Lyons, IL 60534 (US). (74) Agents: GESS, E., Joseph et al.; Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i>	

(54) Title: METHOD FOR CALIBRATION OF A SPECTROSCOPIC SENSOR

(57) Abstract

A novel method for calibration of a spectroscopic sensor is provided. In the method, a spectroscopic system is provided. The system includes a measurement cell having one or more walls which at least partially enclose a sample region. The cell further includes a light entry port and a light exit port. The light entry port and the light exit port can be the same port or separate ports. Each of the ports contains a light transmissive window through which a light beam passes along an internal light path inside the measurement cell. The system further has an optical chamber which contains a light source for generating the light beam which passes through the light entry port into the cell, and a detector for measuring the light beam exiting the cell through the light exit port. The light beam passes along an external light path inside the optical chamber. In addition, a gas inlet is connected to the optical chamber. A calibration gas stream is introduced into the optical chamber. The calibration gas stream contains a calibrating gas species and a carrier gas. The calibrating gas species is present in the calibration gas stream in a known concentration. A spectroscopy measurement of the calibration gas stream is then performed. The method finds particular applicability in the calibration of an in-line spectroscopic sensor useful in the detection of molecules of interest in a semiconductor processing tool.

