(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 April 2005 (14.04.2005)

PCT

(10) International Publication Number
WO 2005/034187 A2

(51) International Patent Classification[7]: H01L

(21) International Application Number:
PCT/US2004/029383

(22) International Filing Date:
10 September 2004 (10.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/668,489 23 September 2003 (23.09.2003) US

(71) Applicant *(for all designated States except US)*: **ADVANCED TECHNOLOGY MATERIALS, INC.** [US/US]; Margaret Chappuis, 7 Commerce Drive, Danbury, Connecticut 06810 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **ARNO, Jose, I.** [ES/US]; 13 Twilight Lane, Brookfield, Connecticut 06810 (US).

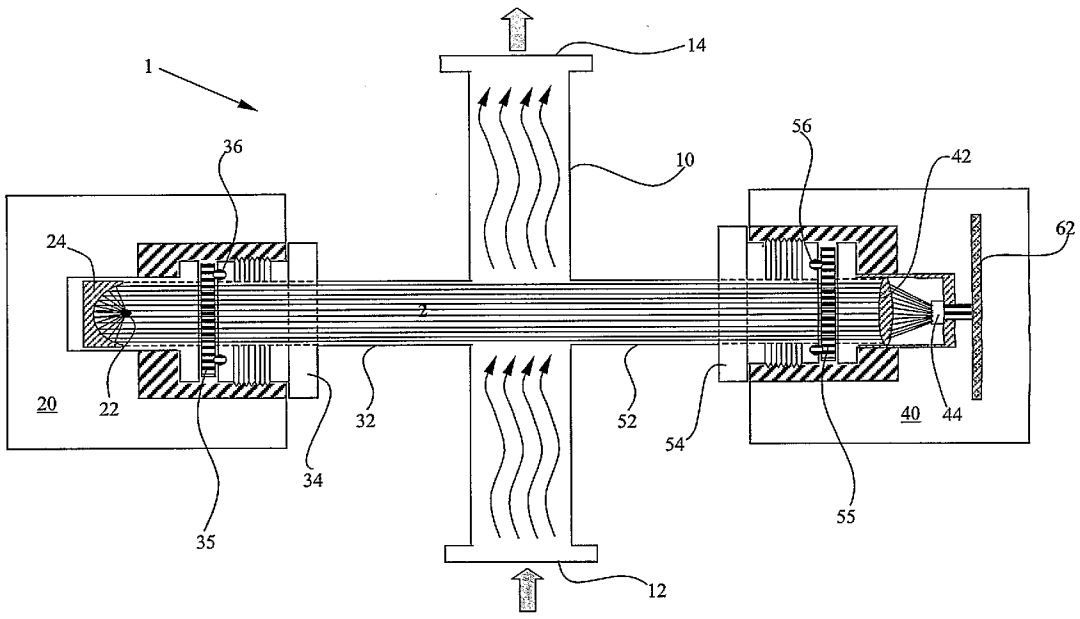
(74) Agent: **MARGARET CHAPPUIS**; Advanced Technology Materials, Inc., 7 Commerce Drive, Danbury, Connecticut 06810 (US).

(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, HR, HU, ID, IL, IN, IS, JP, KE, KG, 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, 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, IT, 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).

[Continued on next page]

(54) Title: MONITORING SYSTEM COMPRISING INFRARED THERMOPILE DETECTOR



(57) Abstract: The present invention relates to a semiconductor processing system that employs infrared-based thermopile detector for process control, by analyzing a material of interest, based on absorption of infrared light at a characteristic wavelength by such material. Specifically, an infrared light beam is transmitted through a linear transmission path from an infrared light source through a sampling region containing material of interest into the thermopile detector. The linear transmission path reduces the risk of signal loss during transmission of the infrared light. The transmission path of the infrared light may comprise a highly smooth and reflective inner surface for minimizing such signal loss during transmission.

WO 2005/034187 A2

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.