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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 August 2006 (10.08.2006)

PCT

(10) International Publication Number
WO 2006/083356 A2

(51) International Patent Classification:
F23G 7/06 (2006.01) *F23N 5/24* (2006.01)
F23G 5/50 (2006.01) *F23N 5/08* (2006.01)

(21) International Application Number:
PCT/US2005/042201

(22) International Filing Date:
17 November 2005 (17.11.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/991,740 18 November 2004 (18.11.2004) US

(71) Applicant: **APPLIED MATERIALS, INC.** [US/US]; 3050 Bowers Avenue, Santa Clara, California 95054 (US).

(72) Inventors: **CHIU, Ho-man Rodney**; 1776 Wayne Circle, San Jose, California 95131 (US). **CLARK, Daniel, O.**; 3657 Locke Court, Pleasanton, CA 94566 (US). **CRAWFORD, Shaun, W.**; 2827 Yarmouth Way, San Ramon, CA 94583 (US). **JUNG, Jay, J.**; 1068 Darrington Court, Sunnyvale, CA 94087 (US). **LOLDJ, Yousseff, A.**; 665 Picasso Terrace, Sunnyvale, CA 94087 (US). **VERMEULEN, Robbert**; 77 Byron Drive, Pleasant Hill, CA 94523 (US).

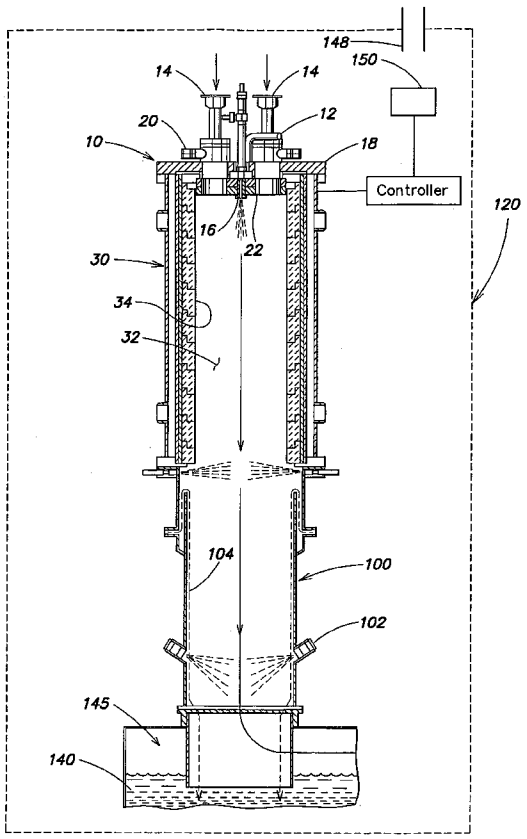
(74) Agent: **DUGAN, Brian, M.**; DUGAN & DUGAN, PC, 55 South Broadway, Tarrytown, New York 10591 (US).

(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, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, 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),

[Continued on next page]

(54) Title: SAFETY, MONITORING AND CONTROL FEATURES FOR THERMAL ABATEMENT REACTOR



(57) Abstract: In one or more aspects, a thermal reactor apparatus is provided that may be used to treat industrial effluent fluids, for example waste effluent produced in semiconductor and liquid crystal display manufacturing processes. Specifically, the present invention may include a system comprising a controller, a reaction chamber adapted to be controlled by the controller, a conduit into the reaction chamber, a pilot disposed at a first end of the conduit within the reaction chamber, a sensor disposed at a second end of the conduit outside of the reaction chamber that is coupled to the controller and adapted to provide an indication to the controller whether the pilot is lit, and an actuator operable to open and close the conduit. Numerous other aspects of the invention are disclosed.

WO 2006/083356 A2

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).

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.