

(51) International Patent Classification:
A61L 9/20 (2006.01)(21) International Application Number:
PCT/US2011/063344(22) International Filing Date:
5 December 2011 (05.12.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/419,867 5 December 2010 (05.12.2010) US(71) Applicant (for all designated States except US): **OY HALTON GROUP LTD.** [FI/FI]; Esterinportti 2, FIN-00240 Helsinki (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LIVCHAK, Andrey, V.** [US/US]; 706 Newbury Street, Bowling Green, KY 4103 (US). **RACZEWSKI, Chester** [CA/CA]; 3169 Malham Gate, Mississauga, Ontario L5M 6K8 (CA).(74) Agents: **CATAN, Mark, A.** et al.; Miles & Stockbridge P.C., 1751 Pinnacle Drive, Suite 500, McLean, VA 22102-3833 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, 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, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: ULTRAVIOLET MONITORING SYSTEMS, METHODS, AND DEVICES

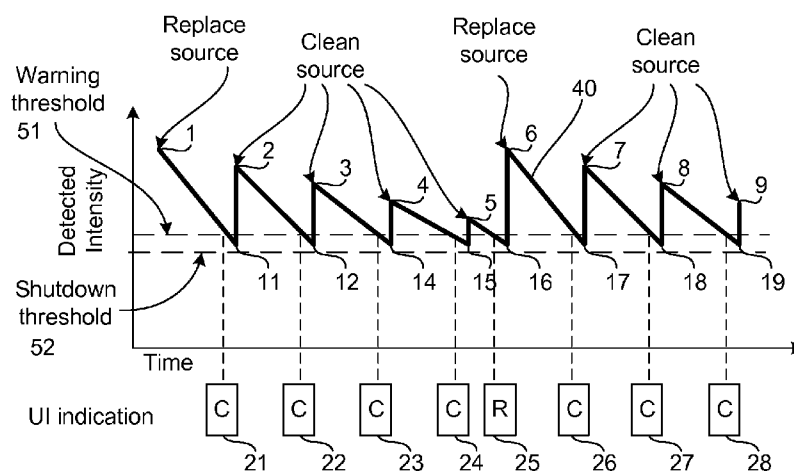


Fig. 5

(57) **Abstract:** In embodiments, a control system for a UV air treatment system, especially one used for cleaning a fume stream such as in a kitchen exhaust system, detects a need for cleaning maintenance on the UV light source based on changes in light intensity. The system further detects the light intensity each time the UV light source is cleaned to determine if the drop in intensity after cleaning indicates that the UV light source should be replaced. The cleaning and replacement requirements are indicated automatically by a user interface.