

(51) International Patent Classification:
H01S 3/098 (2006.01)(21) International Application Number:
PCT/US2010/055372(22) International Filing Date:
4 November 2010 (04.11.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/620,967 18 November 2009 (18.11.2009) US(71) Applicant (for all designated States except US):
CYMER, INC. [US/US]; (a Nevada Corporation), 17075
Thornmint Court, San Diego, CA 92127-2413 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): RIGGS, Daniel, J.
[US/US]; 10536 Caminito Banyon, San Diego, CA 92131
(US). HAUGAN, Olav [NO/US]; 15617 Avenida Alca-
chofa, #C, San Diego, CA 92128 (US).(74) Agent: BROOKS, Jeffrey, J.; Cymer, Inc., Legal Dept.,
MS/4-2D, 17075 Thornmint Court, San Diego, CA
92127-2413 (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, RO, RS, RU, 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, 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: ADVANCED LASER WAVELENGTH CONTROL

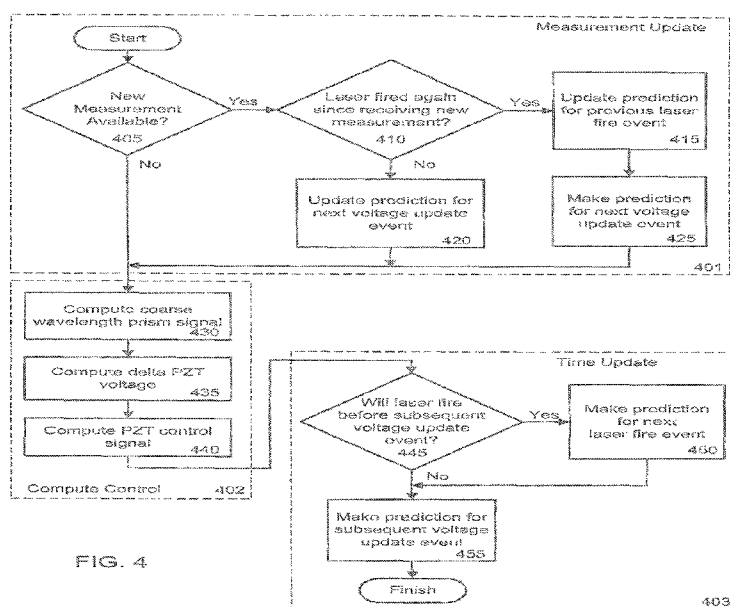


FIG. 4

(57) Abstract: Laser light wavelength control is provided by periodically predicting a next position of a light controlling prism using a model of the prism's motion characteristics. The prediction is then updated if a measurement of laser output, wavelength is obtained. However, because the predictions are made without waiting for a measurement, they can be made more frequently than the laser firing repetition rate and the prism can be repositioned at discrete points in time which can occur more frequently than the laser firing events. This also reduces performance degradation which may be caused by being one pulse behind a laser measurement and the resultant laser control signal being applied.