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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 August 2011 (25.08.2011)

PCT

(10) International Publication Number
WO 2011/101187 A1

(51) International Patent Classification:
G03F 7/20 (2006.01) *G03F 9/00* (2006.01)

(21) International Application Number:
PCT/EP2011/050438

(22) International Filing Date:
14 January 2011 (14.01.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/306,065 19 February 2010 (19.02.2010) US

(71) Applicant *(for all designated States except US)*: **ASML Netherlands B.V.** [NL/NL]; De Run 6501, NL-5504 DR Veldhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **PADIY, Alexandre, Viktorovych** [NL/NL]; Waleweinlaan 8, NL-5665 CK Geldrop (NL). **MENCHTCHIKOV, Boris** [RU/NL]; Pieter Borpad 16, NL-5624 EP Eindhoven (NL).

(74) Agent: **WEENINK, Willem**; De Run 6665, NL-5504 DT Veldhoven (NL).

(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))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(54) Title: LITHOGRAPHIC APPARATUS AND DEVICE MANUFACTURING METHOD

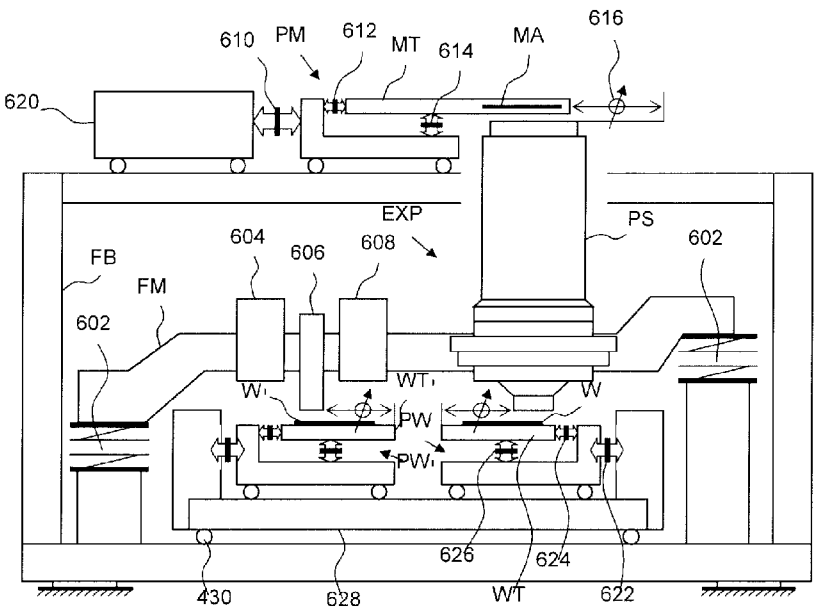

Fig. 6

(57) Abstract: A method controls a scanning function of a lithographic apparatus. A first alignment strategy is used. A monitor wafer is exposed to determine baseline control parameters pertaining to the scanning function. The baseline control parameters are periodically retrieved from the monitor wafer. Parameter drift is determined from the baseline control parameters. Corrective action is taken based on the determination. A production wafer is exposed using a second alignment strategy, different to the first alignment strategy. The corrective action is modified so as to be substantially closer to the correction that would have been made had the second alignment strategy been used in exposing the monitor wafer.

WO 2011/101187 A1