

(51) International Patent Classification:

H01L 21/033 (2006.01) H01L 21/67 (2006.01)
H01L 21/311 (2006.01) H01L 21/66 (2006.01)
H01L 21/3213 (2006.01)

(21) International Application Number:

PCT/US2021/030731

(22) International Filing Date:

04 May 2021 (04.05.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/023,157 11 May 2020 (11.05.2020) US

(71) Applicant: LAM RESEARCH CORPORATION

[US/US]; 4650 Cushing Parkway, Fremont, CA 94538 (US).

(72) Inventors: KUMAR, Ravi; 4650 Cushing Parkway, Fremont, CA 94538 (US).

AGARWAL, Pulkit; 4650 Cushing Parkway, Fremont, CA 94538 (US). ROBERTS, Michael Philip; 4650 Cushing Parkway, Fremont, CA 94538 (US). CHANDRASEKHARAN, Ramesh; 4650 Cushing Parkway, Fremont, CA 94538 (US). LAVOIE, Adrien; 4650 Cushing Parkway, Fremont, CA 94538 (US).

(74) Agent: HSU, Lin C. et al.; PENILLA IP, APC, 1200 Pacific Avenue, Suite 250, Santa Cruz, CA 95060 (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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, ML, MR, NE, SN, TD, TG).

Published:

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

(54) Title: AUTOMATED FEEDFORWARD AND FEEDBACK SEQUENCE FOR PATTERNING CD CONTROL

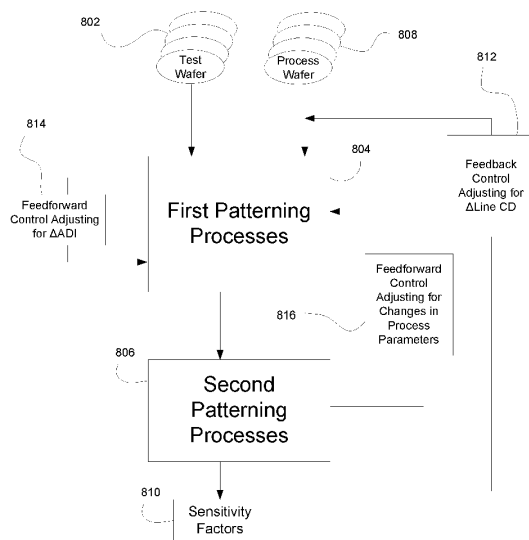


FIG. 8A

(57) Abstract: A method for performing a feedback sequence for patterning CD control. The method including performing a series of process steps on a wafer to obtain a plurality of features, wherein a process step is performed under a process condition. The method including measuring a dimension of the plurality of features after performing the series of process steps. The method including determining a difference between the dimension that is measured and a target dimension for the plurality of features. The method including modifying the process condition for the process step based on the difference and a sensitivity factor for the plurality of features relating change in dimension and change in process condition.