



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

(21) International Application Number:
PCT/US2022/045832

(22) International Filing Date:
06 October 2022 (06.10.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/283,429 27 November 2021 (27.11.2021) US

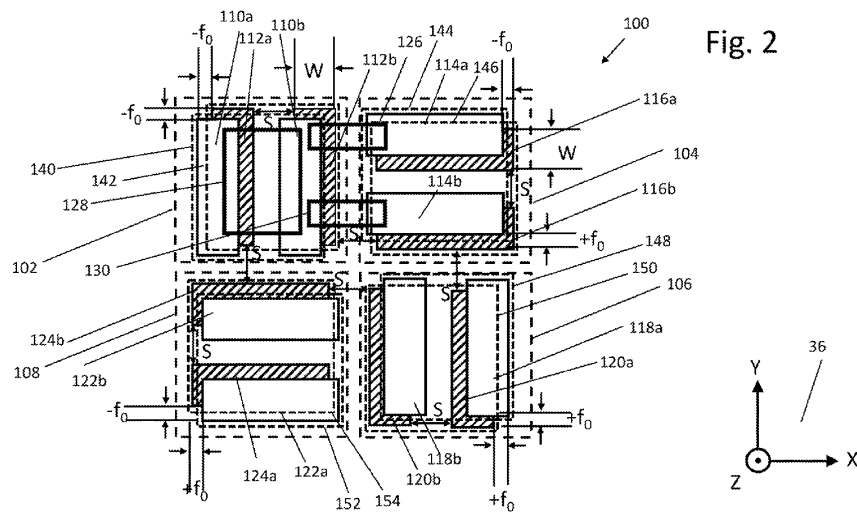
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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG,

(54) Title: IMPROVED TARGETS FOR DIFFRACTION-BASED OVERLAY ERROR METROLOGY



(57) Abstract: A method for semiconductor metrology includes depositing first and second overlying film layers on a semiconductor substrate and patterning the layers to define an overlay target. The target includes a first grating pattern in the first layer, including at least a first linear grating oriented in a first direction and at least a second linear grating oriented in a second direction perpendicular to the first direction, and a second grating pattern in the second layer, including at least a third linear grating identical to the first linear grating and a fourth linear grating identical to the second linear grating. The second grating pattern has a nominal offset relative to the first grating pattern by first and second displacements in the first and second directions, respectively. A scatterometric image of the substrate is captured and processed to estimate an overlay error between the patterning of the first and second layers.

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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, ME, 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))