

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
04 June 2020 (04.06.2020)



(10) International Publication Number
WO 2020/112330 A1

- (51) International Patent Classification:
H01J 37/32 (2006.01) *C23C 16/458* (2006.01)
- (21) International Application Number:
PCT/US2019/060625
- (22) International Filing Date:
08 November 2019 (08.11.2019)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/774,022 30 November 2018 (30.11.2018) US
16/676,097 06 November 2019 (06.11.2019) 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, 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, 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, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(54) Title: SEQUENTIAL DEPOSITION AND HIGH FREQUENCY PLASMA TREATMENT OF DEPOSITED FILM ON PAT-
TERNED AND UN-PATTERNED SUBSTRATES

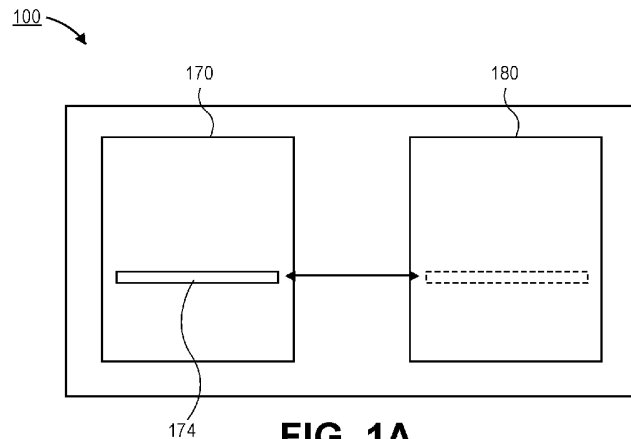


FIG. 1A

(57) Abstract: Embodiments disclosed herein include methods of forming high quality silicon nitride films. In an embodiment, a method of depositing a film on a substrate may comprise forming a silicon nitride film over a surface of the substrate in a first processing volume with a deposition process, and treating the silicon nitride film in a second processing volume, wherein treating the silicon nitride film comprises exposing the film to a plasma induced by a modular high-frequency plasma source. In an embodiment, a sheath potential of the plasma is less than 100 V, and a power density of the high-frequency plasma source is approximately 5 W/cm² or greater, approximately 10 W/cm² or greater, or approximately 20 W/cm² or greater.

[Continued on next page]

WO 2020/112330 A1

(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))