

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
05 March 2020 (05.03.2020)



(10) International Publication Number
WO 2020/046852 A1

- (51) **International Patent Classification:**
H01L 21/28 (2006.01) *H01L 21/02* (2006.01)
- (21) **International Application Number:**
PCT/US2019/048220
- (22) **International Filing Date:**
27 August 2019 (27.08.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/723,596 28 August 2018 (28.08.2018) US
16/550,523 26 August 2019 (26.08.2019) 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.
- (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,

(54) **Title:** METHODS OF DEPOSITING METAL CARBIDE FILMS

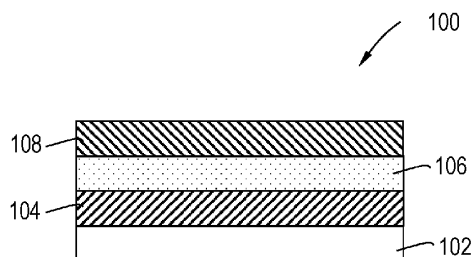


FIG. 2

(57) **Abstract:** Methods of depositing a metal carbide film by exposing a substrate surface to a halide precursor and an aluminum reactant are described. The halide precursor comprises a compound of general formula (I) MX_yR_n , wherein M is a metal, X is a halogen selected from Cl, Br, F or I, y is from 1 to 6, R is selected from alkyl, CO, and cyclopentadienyl, and n is from 0 to 6. The aluminum reactant comprises a compound of general formula (II) $Al(CH_2AR^1R^2R^3)_3$, wherein A is C, Si, or Ge, each of R^1 , R^2 , and R^3 is independently alkyl or comprises substantially no β -hydrogen.

[Continued on next page]



WO 2020/046852 A1

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))*