

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
10 August 2023 (10.08.2023)



(10) International Publication Number
WO 2023/150066 A1

(51) International Patent Classification:

C23C 16/06 (2006.01) C23C 16/455 (2006.01)
C23C 16/04 (2006.01) C23C 16/515 (2006.01)
C23C 16/52 (2006.01)

(21) International Application Number:

PCT/US2023/011779

(22) International Filing Date:

27 January 2023 (27.01.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/306,287 03 February 2022 (03.02.2022) 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, 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.

(54) Title: PROCESS FOR SELECTIVELY DEPOSITING HIGHLY-CONDUCTIVE METAL FILMS

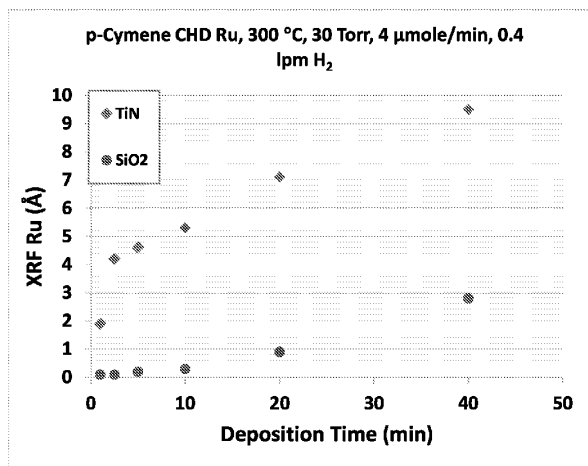


Figure 1

(57) Abstract: Provided is a process comprising a selective ruthenium seed layer deposition with oxygen-free ruthenium precursors, followed by bulk deposition of metal-containing precursors such as tungsten, molybdenum, cobalt, ruthenium, and/or copper-containing precursors. The ruthenium seed layer deposition is highly selective for the conducting portions of the microelectronic device substrate while minimizing deposition onto the insulating surfaces of the microelectronic device substrate. In certain embodiments, the conducting portions of the substrate is chosen from titanium nitride, tungsten nitride, tantalum nitride, tungsten, cobalt, molybdenum, aluminum, and copper.

[Continued on next page]

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, 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).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

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