

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
14 October 2021 (14.10.2021)



(10) International Publication Number
WO 2021/207254 A1

(51) International Patent Classification:

C25D 3/38 (2006.01) C25D 5/34 (2006.01)
C25D 3/58 (2006.01) C25D 5/50 (2006.01)
C25D 7/12 (2006.01)

(21) International Application Number:

PCT/US2021/026028

(22) International Filing Date:

06 April 2021 (06.04.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/006,500 07 April 2020 (07.04.2020) 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, 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).

(54) Title: ELECTROFILL FROM ALKALINE ELECTROPLATING SOLUTIONS

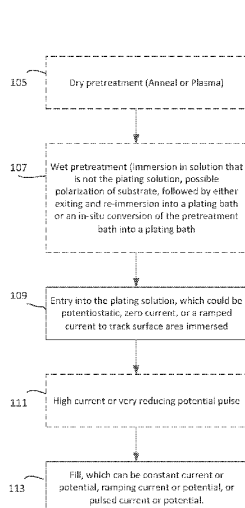


Figure 1

(57) Abstract: Disclosed are alkaline electrodeposition solutions and apparatus and methods for using such solutions to electroplate metal. During electroplating, the solutions may produce superconformal fill of metal in features such as features having a critical dimension of about 20 nm or less. The metal electroplating process may be used during integrated circuit fabrication. For example, it may be used to fill trenches and vias in partially fabricated integrated circuits. The electroplated metal may be copper. The copper may be electroplated on a substrate material that is less noble than copper.

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Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*