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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 October 2025 (16.10.2025)

WIPO | PCT

(10) International Publication Number
WO 2025/217208 A1

(51) International Patent Classification:
C09G 1/02 (2006.01) *H01L 21/321* (2006.01)
C09K 3/14 (2006.01)

(21) International Application Number:
PCT/US2025/023733

(22) International Filing Date:
08 April 2025 (08.04.2025)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/633,249 12 April 2024 (12.04.2024) 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, MU, 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, UY, UZ, VC, VN, WS, ZA, ZM, ZW.

(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, SC, 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))*

(54) Title: CHEMICAL MECHANICAL PLANARIZATION POLISHING FOR INTERCONNECTS DIFFUSION BARRIER MATERIALS

(57) Abstract: Present invention provides Chemical Mechanical Planarization (CMP) polishing compositions, methods and systems for polishing diffusion barrier materials (such as ruthenium) for metal interconnects (such as copper) in semiconductor manufacture. The CMP polishing compositions use a family of cyclic chelator comprising at least one N-C-C-N group and at least one cyclic ring. The CMP polishing compositions have demonstrated increased removal rate of diffusion barrier layer metals such as ruthenium.

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