



(51) **International Patent Classification:**
C09G 1/04 (2006.01) *B24B 37/04* (2012.01)
H01L 21/321 (2006.01)

(21) **International Application Number:**
PCT/US2022/038623

(22) **International Filing Date:**
28 July 2022 (28.07.2022)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
63/229,745 05 August 2021 (05.08.2021) US

(71) **Applicant: FUJIFILM ELECTRONIC MATERIALS U.S.A., INC.** [US/US]; 80 Circuit Drive, N. Kingstown, Rhode Island 02852 (US).

(72) **Inventors: HUANG, Ting-Kai;** No. 58-6, Tugou, Houbi Dist., Tainan City 731 (TW). **HU, Bin;** 3360 S. Beverly Place, Chandler, Arizona 85248 (US). **LIANG, Yannan;** 3098 E. Linda Lane, Gilbert, Arizona 85234 (US). **PIAO, Hong;** 2666 E. Bridgeport Parkway, Gilbert, Arizona 85295 (US).

(74) **Agent: ZHANG, Tony;** Fish & Richardson P.C., P.O. Box 1022, New York, New York 55440-1022 (US).

(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, 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:** COMPOSITIONS AND METHODS OF USE THEREOF

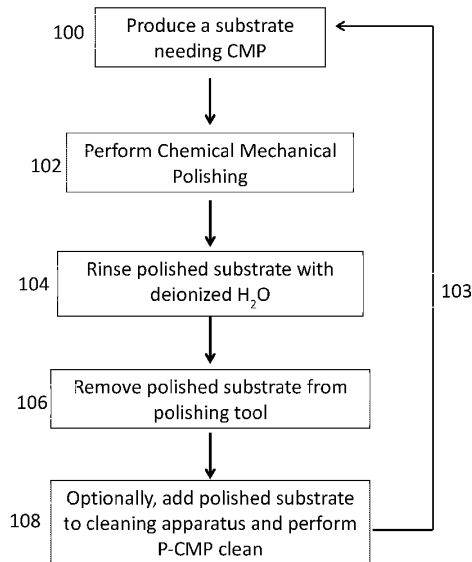


FIG. 1

(57) **Abstract:** This disclosure relates to a composition that includes at least one first ruthenium removal rate enhancer; at least one copper removal rate inhibitor; at least one low-k removal rate inhibitor; and an aqueous solvent.

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))*