

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

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number
WO 2025/122389 A1

(43) International Publication Date
12 June 2025 (12.06.2025)

(51) International Patent Classification:

C09G 1/02 (2006.01) H01L 21/321 (2006.01)
C09K 3/14 (2006.01)

(21) International Application Number:

PCT/US2024/057446

(22) International Filing Date:

26 November 2024 (26.11.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/607,266 07 December 2023 (07.12.2023) US

(71) Applicant: **VERSUM MATERIALS US, LLC** [US/US];
8555 South River Parkway, Tempe, Arizona 85284 (US).

(72) Inventors: **CHEN, Jing-Zhi**; c/o Versum Materials US,
LLC, 8555 South River Parkway, Tempe, Arizona 85284
(US). **MALLIKARJUNAN, Anupama**; c/o Merck Elec-
tronics KGaA, Frankfurter Strasse 250, 64293 Darmstadt
(DE).

(74) Agent: **YANG, Lina**; Versum Materials US, LLC, 8555
South River Parkway, Tempe, Arizona 85284 (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, 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, 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 ADDITIVES FOR CHEMICAL MECHANICAL PLANARIZATION (CMP) POLISHING COMPOSITIONS

(57) Abstract: Present invention provides Chemical Mechanical Planarization (CMP) polishing compositions, methods and systems for polishing copper. The CMP polishing compositions comprise specific amino alcohol compounds having weak suppression effect on Cu polishing to protect low-lying areas during the removal of protruded features, thereby maintaining planarization efficiency in the advanced node Cu CMP process.



WO 2025/122389 A1