

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
03 November 2022 (03.11.2022)



(10) International Publication Number
WO 2022/232154 A1

(51) International Patent Classification:
C09G 1/04 (2006.01) *B24B 37/24* (2006.01)
B01D 11/02 (2006.01) *C09G 1/18* (2006.01)

(21) International Application Number:
PCT/US2022/026364

(22) International Filing Date:
26 April 2022 (26.04.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/179,995 26 April 2021 (26.04.2021) 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, 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,

(54) Title: PAD SURFACE REGENERATION AND METAL RECOVERY

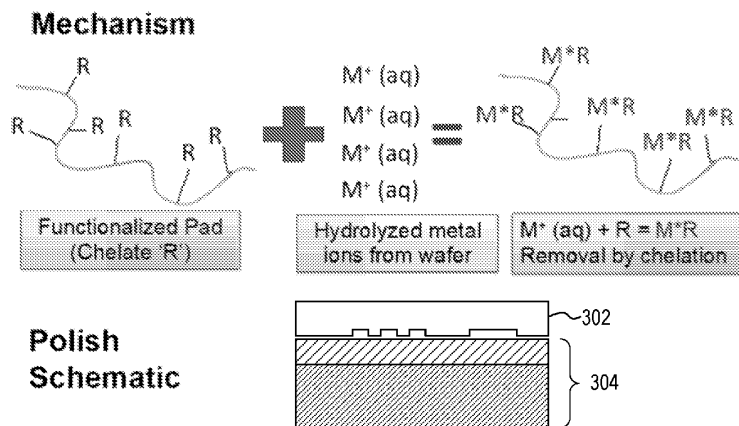


FIG. 3

(57) **Abstract:** A method comprises planarizing a substrate material with a functionalized chemical planarization pad. The functionalized chemical planarization pad includes a plurality of functional groups bonded to a material of the pad. The functional groups are configured to chemically react with the substrate material such that a portion of substrate material bonds to the functional groups. The pad is regenerated by applying a regeneration solution configured to break bonds between the functional groups and substrate material bonded to the functional groups to form removed material. The removed material is complexed in a dissolved complexing agent to form dissolved material in an effluent phase.

[Continued on next page]

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))*
- *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))*