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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
28 May 2009 (28.05.2009)

PCT

(10) International Publication Number
WO 2009/067393 A1

(51) International Patent Classification:
B24B 37/04 (2006.01) *B24D 11/00* (2006.01)
B24D 13/14 (2006.01)

(21) International Application Number:
PCT/US2008/083730

(22) International Filing Date:
17 November 2008 (17.11.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/943,213 20 November 2007 (20.11.2007) 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, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(54) Title: DAMPING POLYURETHANE CMP PADS WITH MICROFILLERS

(57) Abstract: A system for preparing a microcellular polyurethane material, includes a froth, prepared, for instance, by inert gas frothing a urethane prepolymer, preferably an aliphatic isocyanate polyether prepolymer, in the presence of a surfactant; a filler soluble in a CMP slurry; and a curative, preferably including an aromatic diamine and a triol. To produce the microcellular material, the froth can be combined with the filler, e.g., PVP, followed by curing the resulting mixture. The microcellular material has a low rebound and can dissipate irregular energy and stabilize polishing to yield improved uniformity and less dishing. CMP pads using the microcellular material have pores created by inert gas frothing throughout the pad polymer body and additional surface pores created by dissolution of fillers during polishing, providing flexibility in surface softness and pad stiffness.

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