



(51) International Patent Classification:
C09K 3/14 (2006.01) *C30B 29/04* (2006.01)
C30B 33/08 (2006.01)

(21) International Application Number:
PCT/US2009/057133

(22) International Filing Date:
16 September 2009 (16.09.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/097,438 16 September 2008 (16.09.2008) US
61/097,422 16 September 2008 (16.09.2008) US
61/187,789 17 June 2009 (17.06.2009) US

(71) Applicant (for all designated States except US): **DIA-
MOND INNOVATIONS, INC.**; 6325 Huntley Road,
Worthington, OH 43086 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DUMM, Timothy,
F.** [US/US]; 338 Bellehaven Parkway, Westerville, OH
43082 (US). **NG, Kan-yin** [CN/US]; 5440 Riverport
Drive, Columbus, OH 43221 (US).

(74) Agent: **GASAWAY, Maria**; Diamond Innovations, Inc.,
6325 Huntley Road, Worthington, OH 43085 (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, BR, BW, BY, BZ,
CA, CH, CL, 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, PE, 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.

[Continued on next page]

(54) Title: ABRASIVE PARTICLES HAVING A UNIQUE MORPHOLOGY

(57) Abstract: An abrasive particle having an irregular surface,
wherein the surface roughness of the particle is less than about
0.95. A method for producing modified abrasive particles, includ-
ing providing a plurality of abrasive particles, providing a reac-
tive coating on said particles, heating said coated particles; and
recovering modified abrasive particles.

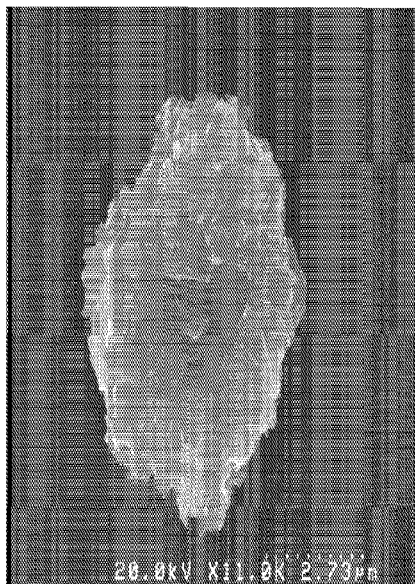


Fig. 8



(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, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM,

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*