



(51) International Patent Classification:

D21H 17/01 (2006.01) **D21H 21/00** (2006.01)
D21H 19/00 (2006.01)

(21) International Application Number:

PCT/US2011/066378

(22) International Filing Date:

21 December 2011 (21.12.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/975,596 22 December 2010 (22.12.2010) US

(71) Applicant (for all designated States except US): **NALCO COMPANY** [US/US]; 1601 W. Diehl Road, Naperville, Illinois 60563-1198 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **CHENG, Weiguo** [CN/US]; 45 S. Naper Blvd. Apt. 30, Naperville, Illinois 60540 (US).(74) Agents: **CARLSEN, Benjamin, E.** et al.; 1601 W. Diehl Road, Naperville, Illinois 60563-1198 (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, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, ML, MR, NE, SN, TD, TG).

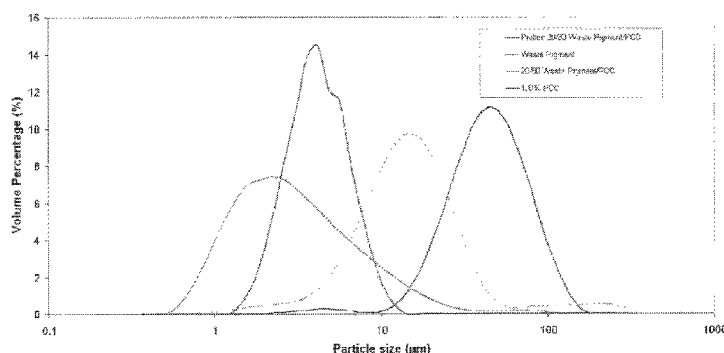
Declarations under Rule 4.17:

- 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))
- of inventorship (Rule 4.17(iv))

Published:

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

(54) Title: RECYCLING OF WASTE COATING COLOR

**FIGURE 1**

(57) **Abstract:** The invention provides a method of recovering and recycling waste coating color from papermaking coating process for use as wet end filler. The inventive method overcomes many technical challenges inherent in using waste coating colors as wet end filler such as the coatings having fine pigments that hurts sheet strength more than regular filler, having strong anionic charge and tendency to disturb wet end chemistry, causing excessive foaming, and containing a large amount of hydrophobic binder particles that tend to agglomerate in the white water and deposit on papermaking equipment. The method involves mixing the coatings with fresh filler particles, adding de-foaming agent, adding cationic coagulant, then preflocculating the mixture. This process causes fresh filler particles, pigments and binders in waste coating color to agglomerate together and form stable flocs with defined particle size distribution. Moreover, using such agglomerate as wet end filler was found to improve sheet strength properties by taking advantage of the binding ability of the latex or binders contained in the waste coating color.

