

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
11 January 2007 (11.01.2007)

PCT

(10) International Publication Number
WO 2007/002982 A1

(51) International Patent Classification:

C09B 47/04 (2006.01) **B41J 2/01** (2006.01)
C09B 47/30 (2006.01) **C09D 11/02** (2006.01)
G06F 17/30 (2006.01)

Kia [AU/AU]; 393 Darling Street, Balmain, Australia,
 New South Wales 2041 (AU).

(74) **Agent:** **SILVERBROOK RESEARCH PTY LTD**; 393
 Darling Street, Balmain, New South Wales 2041 (AU).

(21) International Application Number:

PCT/AU2006/000782

(81) **Designated States** (unless otherwise indicated, for every
 kind of national protection available): AE, AG, AL, AM,
 AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
 KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
 LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI,
 NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE,
 SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
 US, UZ, VC, VN, ZA, ZM, ZW.

(22) **International Filing Date:** 8 June 2006 (08.06.2006)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
 11/172,814 5 July 2005 (05.07.2005) US

(71) **Applicant** (for all designated States except US): **SILVER-
 BROOK RESEARCH PTY LTD** [AU/AU]; 393 Darling
 Street, Balmain, New South Wales 2041 (AU).

(72) Inventors; and

(75) **Inventors/Applicants** (for US only): **VONWILLER,
 Simone, Charlotte** [AU/AU]; 393 Darling Street, Bal-
 main, New South Wales 2041 (AU). **RIDLEY, Damon,
 Donald** [AU/AU]; 393 Darling Street, Balmain, New
 South Wales 2041 (AU). **INDUSEGARAM, Sutharsiny**
 [AU/AU]; 393 Darling Street, Balmain, New South Wales
 2041 (AU). **STARLING, Scott, Matthew** [AU/AU]; 393
 Darling Street, Balmain, New South Wales 2041 (AU).
GONZAGA, Graciél [SE/AU]; 393 Darling Street, Bal-
 main, New South Wales 2041 (AU). **SILVERBROOK,**

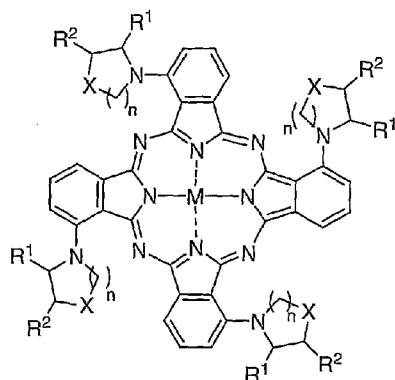
(84) **Designated States** (unless otherwise indicated, for every
 kind of regional protection available): ARIPO (BW, GH,
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
 European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
 FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,
 RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
 GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
 ance Notes on Codes and Abbreviations" appearing at the begin-
 ning of each regular issue of the PCT Gazette.

(54) **Title:** NITROGEN-SUBSTITUTED WATER-DISPERSIBLE PHTHALOCYANINE DYES



(I)

(57) **Abstract:** A phthalocyanine dye of formula (I) is provided; wherein: M is a metal group or is absent; n is 1 or 2; X is selected from CHR³, NR³, O or S; R¹, R² and R³ are independently selected from hydrogen, C₁₋₈ alkyl, C₁₋₈ alkoxy, carboxy, carboxy-C₁₋₈ alkyl, hydroxyl, hydroxy-C₁₋₈ alkyl; or R¹ and R², or R² and R³ together are joined to form a C₄₋₁₂ aryl or C₃₋₁₂ heteroaryl group, optionally substituted with 1, 2, 3 or 4 substituent groups, the or each substituent group being independently selected from C₁₋₁₂ alkyl, C₁₋₁₂ alkoxy, phenyl-C₁₋₈ alkyl, phenyl-C₁₋₈ alkoxy, (OCH₂CH₂)_dOR^d, cyano, halogen, amino, hydroxyl, thiol, -SR^v, -NR^uR^v, nitro, phenyl, phenoxy, CO₂R^v, -C(O)R^v, -C(O)R^v, -OCOR^v, -SO₂OR^v, -OSO₂R^v, -NHC(O)R^v, -CONR^uR^v, -CONR^uR^v, sulfonic acid, sulfonic acid salt and sulfonamide; d is an integer from 2 to 5000; R^d is H, C₁₋₈ alkyl or C(O)C₁₋₈ alkyl and R^u and R^v are independently selected from hydrogen, C₁₋₁₂ alkyl, phenyl or phenyl-C₁₋₈ alkyl. Dyes of this type are especially suitable for use in netpage and HyperlabelTM systems.

WO 2007/002982 A1