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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 April 2008 (24.04.2008)

PCT

(10) International Publication Number
WO 2008/048190 A1

(51) International Patent Classification:
*C09K 11/77* (2006.01)

(21) International Application Number:
PCT/SG2007/000352

(22) International Filing Date: 17 October 2007 (17.10.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/829,768 17 October 2006 (17.10.2006) US

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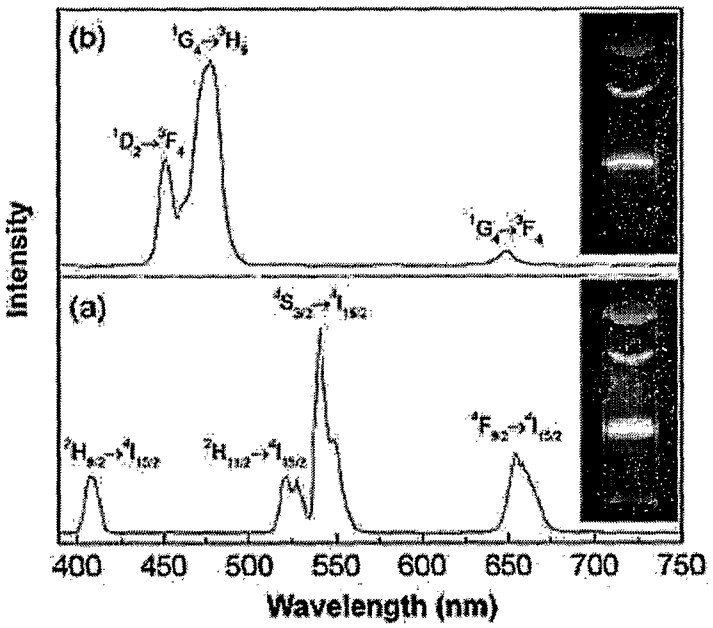
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, 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, 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, HU, IE, IS, IT, LT, LU, LV, MC, MT, 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).

**Declaration under Rule 4.17:**
— *of inventorship (Rule 4.17(iv))*

**Published:**
— *with international search report*

(54) Title: UPCONVERSION FLUORESCENT NANO-STRUCTURED MATERIAL AND USES THEREOF




(57) Abstract: Upconversion fluorescent nano-structured material(s) comprising at least one compound of formula $(M_1)_j(M_2)_kX_n:(M_3)_q$ and at least one polymer, wherein: each X is the same or different and is selected from the group consisting of: halogen, O, S, Se, Te, N, P and As; each $M_1$, if present, is the same or different and is selected from the group consisting of: Li, Na, K, Rb, Cs, Fr, Be, Mg, Ca, Sr, Ba, Ra, O and $NH_4$; each $M_2$ is the same or different and is a metal ion; each $M_3$, independently, is the same or different and is selected from the group consisting of Sc, Y, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb and Lu; j is $0 \leq j \leq 10$; k is $1 \leq k \leq 10$; n is $1 \leq n \leq 10$; and q is $1 \leq q \leq 10$. In particular, the polymer is wherein the polymer soluble in polar solvents.

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