

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 March 2012 (15.03.2012)

(10) International Publication Number
WO 2012/033557 A1

PCT

(51) International Patent Classification:
H05B 33/14 (2006.01)

(21) International Application Number:
PCT/US2011/041111

(22) International Filing Date:
20 June 2011 (20.06.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/381,862 10 September 2010 (10.09.2010) US
61/441,977 11 February 2011 (11.02.2011) US

(71) Applicant (for all designated States except US):
LIGHTSCAPE MATERIALS, INC. [US/US]; 201
Washington Road, Princeton, NJ 08540 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LI, Yuanqiang**
[CN/US]; 5418 Ravens Crest Drive, Plainsboro, NJ
08536 (US). **ROMANELLI, Michael, Dennis** [US/US];
326 Greenbrook Road, North Plainfield, NJ 07060 (US).
TIAN, Yongchi [US/US]; 1 Roseland Court, Princeton
Junction, NJ 08550 (US).

(74) Agents: **SCHROEDER, Lisa, K.** et al.; Lowenstein San-
dler, PC, 65 Livingston Avenue, Roseland, NJ 07068
(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, 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, 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).

Published:

— with international search report (Art. 21(3))

(54) Title: SILICON CARBIDONITRIDE BASED PHOSPHORS AND LIGHTING DEVICES USING THE SAME

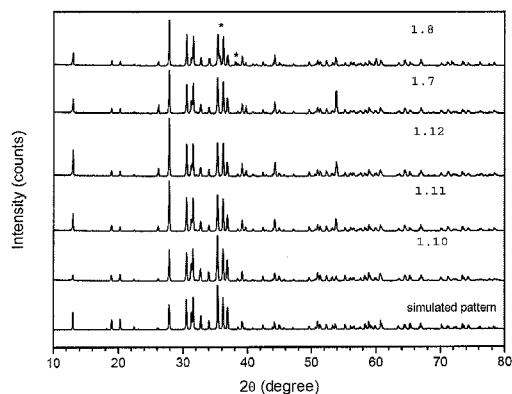


Figure 1

(57) Abstract: Disclosed herein are novel families of silicon carbide nitride phosphor compositions. In certain embodiments, optical ranges of carbon content have been identified which provide excellent luminescence and thermal stability characteristics.

WO 2012/033557 A1