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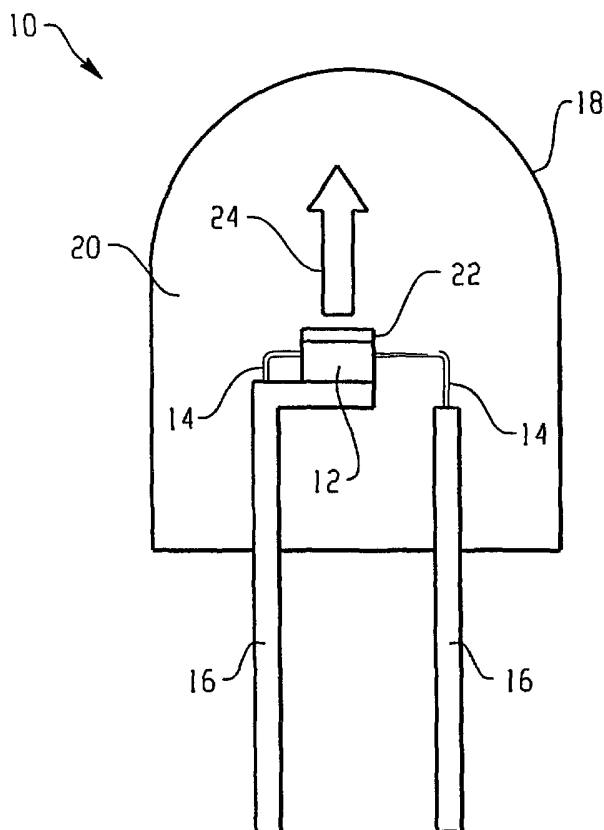
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[Continued on next page]

(54) Title: FULL SPECTRUM PHOSPHOR BLENDS FOR WHITE LIGHT GENERATION WITH LED CHIPS



(57) Abstract: A light emitting device including a phosphor blend including four or more phosphors emitting within a specific spectral range to optimize the color rendering index (CRI) for a given color coordinated temperature (CCT). The blend will include at least four phosphors selected from the following: a blue phosphor having an emission peak at 400-500 nm, a green phosphor having an emission peak at 500-575 nm, an orange phosphor having an emission peak from 575-615 nm, and a deep red phosphor having an emission peak at 615-680 nm. The preferred blends are used to make light sources with general CRI values (R_a) greater than 95 at CCT's from about 2500 to 8000 K.



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, IT, LU, 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).

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/20086

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 29/20

US CL : 257/89

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 257/89, 98, 103; 313/503, 512

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 6,621,211 A (SRIVASTAVA et al) 16 September 2003 (16.09.2003) whole document.	33-35, 37-40
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Y, P		1-32, 36, 41-49
Y, P	US 2004/0000862 A1 (SETLUR et al) 1 January 2004 (01.01.2004) whole document.	1-32, 36, 41-49
Y	US 6,099,754 A (YOCOM et al) 8 August 2000 (08.08.2000) column 1, lines 55-66.	1-32, 36, 41-49
Y	WO 01/33640 A1 (SCHLERETH et al) 10 May 2001 (10.05.2001) whole document.	1-32, 36, 41-49

☐ Further documents are listed in the continuation of Box C.

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document member of the same patent family

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INTERNATIONAL SEARCH REPORT

PCT/US04/20086

Continuation of B. FIELDS SEARCHED Item 3:

EAST

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