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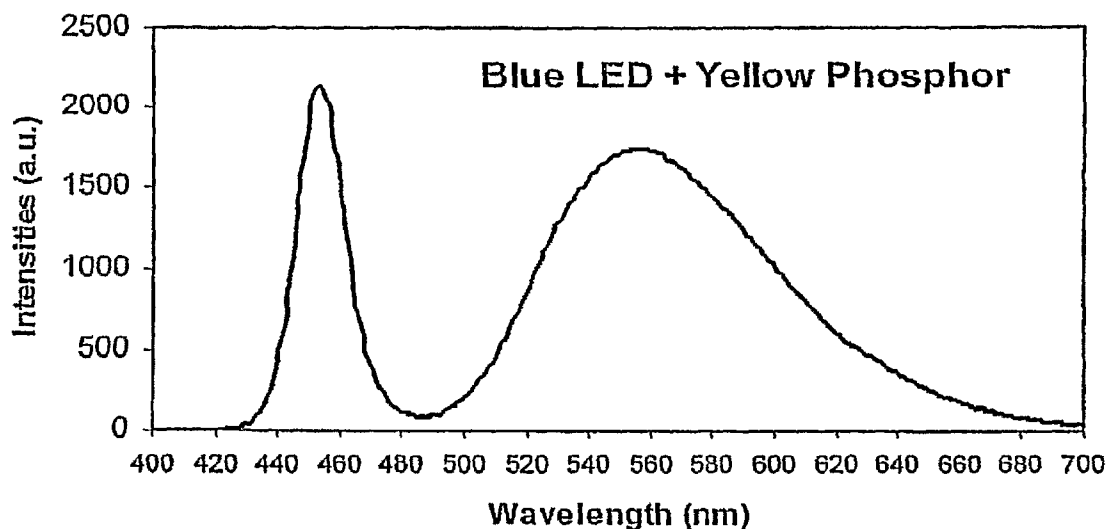
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL SILICATE-BASED YELLOW-GREEN PHOSPHORS



(57) Abstract: Novel phosphor systems are disclosed having the formula $A_2SiO_4:Eu^{2+}D$, where A is at least one of a divalent metal selected from the group consisting of Sr, Ca, Ba, Mg, Zn, and Cd; and D is a dopant selected from the group consisting of F, Cl, Br, I, S and N. In one embodiment, the novel phosphor has the formula $(Sr_{1-x}Ba_xM_y)_2SiO_4:Eu^{2+}F$ (where M is one of Ca, Mg, Zn, or Cd in an amount ranging from $0 < y < 0.5$). The phosphor is configured to absorb visible light from a blue LED, and luminescent light from the phosphor plus light from the blue LED may be combined to form white light. The novel phosphors can emit light at intensities greater than either conventionally known YAG compounds, or silicate-based phosphors that do not contain the inventive dopant ion.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/12583

A. CLASSIFICATION OF SUBJECT MATTER

IPC: C09K 11/77(2006.01)

USPC: 252/301.4F,301.4R,301.4P

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. : 252/301.4F, 301.4R, 301.4P, 301.6F; 257/98; 313/503

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 --- A	US 6,621,211 B1 (SRIVASTAVA et al.) 16 September 2003 (16.09.2003), entire document.	1-10, 18, 19 and 21-26 ----- 11, 12, 14-17 and 20
X --- A	US 6,555,958 B1 (SRIVASTAVA et al.) 29 April 2003 (29.04.2003), entire document.	1-9, 19 and 21-26 ----- 11, 12, 14-17 and 20
X, E --- A, E	US 7,023,019 B2 (MAEDA et al.) 04 April 2006 (04.04.2006), entire document. (This patent is the translation for WO 03/021691).	1-7, 10, 13, 19 and 22-26 ----- 11, 12, 14-17 and 20

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

☐ See patent family annex.

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Date of the actual completion of the international search

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- A	US 3,505,240 (BARRY) 07 April 1970 (07.04.1970), entire document.	1-4, 19 and 22-26 ----- 11, 12, 14-17 and 20

INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

EAST: US-PGPUB; USPAT WEST: EPAB; JPAB; DWPI

Search terms: silicate, ortho\$1silicate, sio?sub.4, halogen, halide, flux, f, fluor?e:, chlori?e, br, bromi?e, iodi?e, i.u/c., s.u/c., sul?\$lur, p.u/c., phosphor?\$2r, sr!, strontium, calcium, barium, magnesium, zinc, cadmium, europium, alkali\$