

Title (en)  
COLLOIDAL DISPERSION OF A RARE-EARTH BORATE, ITS METHOD OF PREPARATION AND ITS USE AS A PHOSPHOR

Title (de)  
KOLLOIDE DISPERSION EINES SELTENERDBORATS, IHR HERSTELLUNGSVERFAHREN UND IHRE VERWENDUNG ALS LEUCHTSTOFF

Title (fr)  
DISPERSION COLLOÏDALE D'UN BORATE DE TERRE RARE, SON PROCEDE DE PREPARATION ET SON UTILISATION COMME LUMINOPHORE

Publication  
**EP 2007847 A1 20081231 (FR)**

Application  
**EP 07712125 A 20070129**

Priority  
• EP 2007050810 W 20070129  
• FR 0600833 A 20060130

Abstract (en)  
[origin: WO2007085650A1] The colloidal dispersion of a rare-earth borate of the invention comprises a liquid phase and colloids of said borate dispersed in this phase, these colloids having a mean hydrodynamic diameter measured by DQEL of at most 200 nm and substantially consisting of an elementary particle with a mean size of less than 100 nm. This dispersion is prepared using a method comprising the following steps: (a) a rare-earth oxide is reacted with a controlled amount of a water-soluble monovalent acid, having a pka of between 2.5 and 5.0; (b) the medium obtained after the reaction is heated; (c) boric acid is added to the medium obtained after the previous step and the mixture obtained is heated at a temperature of at least 170°C; and (d) the solid product is separated from the liquid medium thus obtained, and redispersed in a liquid phase, thereby obtaining the colloidal dispersion. The borate of the invention may be used as a phosphor, especially in the manufacture of a luminescent transparent material.

IPC 8 full level  
**B01J 13/00** (2006.01); **C01F 17/00** (2006.01); **C09K 11/78** (2006.01)

CPC (source: EP KR US)  
**B01J 13/0013** (2013.01 - EP KR US); **C01B 35/127** (2013.01 - EP KR US); **C01B 35/128** (2013.01 - EP KR US);  
**C09K 11/02** (2013.01 - EP KR US); **C09K 11/778** (2013.01 - EP KR US); **C09K 11/7797** (2013.01 - EP US)

Citation (search report)  
See references of WO 2007085650A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)  
AL BA HR MK RS

DOCDB simple family (publication)  
**WO 2007085650 A1 20070802**; CN 101374928 A 20090225; CN 101374928 B 20120418; EP 2007847 A1 20081231; FR 2896791 A1 20070803; FR 2896791 B1 20081010; JP 2009525244 A 20090709; KR 101027553 B1 20110406; KR 20080081086 A 20080905; US 2009256115 A1 20091015

DOCDB simple family (application)  
**EP 2007050810 W 20070129**; CN 200780003687 A 20070129; EP 07712125 A 20070129; FR 0600833 A 20060130; JP 2008551801 A 20070129; KR 20087018629 A 20070129; US 16259507 A 20070129