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(54) **Recovery of electroluminescent phosphor from encapsulated material**

(57) A method of recovering a base phosphor from encapsulated phosphors, which comprises the steps of selecting a recovery vessel including a magnetic stir bar; adding to the recovery vessel, deionized water, a first batch of concentrated hydrochloric acid and encapsulated phosphor to form a stirred suspension; heating the stirred suspension to about 90°C for about 2 hours; settling the stirred suspension; decanting the mother liquor

and slurring the remaining solids with a second batch of hydrochloric acid and water; decanting and washing the remaining solids with deionized water; filtering the remaining solids to form a filter cake; heating the filter cake at 110°C in air for a time sufficient to form a dried filter cake; and screening the dried filter cake through a -325 mesh screen to yield a recovered base phosphor.

EP 1 215 260 A3



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	DE 196 17 942 C (INST TECHNOLOGIE UND UMWELTSCH) 26 June 1997 (1997-06-26) * the whole document *	1	C09K11/01
A	US 4 432 948 A (HEYTMEIJER HERMAN R) 21 February 1984 (1984-02-21) * the whole document *	1	
A	US 3 954 657 A (FOREST HARVEY ET AL) 4 May 1976 (1976-05-04) * the whole document *	1	
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 08, 30 June 1999 (1999-06-30) & JP 11 071111 A (SAITO FUMIYOSHI; KYOGYO KUMIAI SENDAI SEISOU KOSHUYA), 16 March 1999 (1999-03-16) * abstract *	1	
A	DATABASE WPI Section Ch, Week 198651 Derwent Publications Ltd., London, GB; Class E33, AN 1986-335899 XP002265884 & JP 61 251514 A (MITSUBISHI CHEM IND LTD) 8 November 1986 (1986-11-08) * abstract *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C09K
A	DATABASE WPI Section Ch, Week 199128 Derwent Publications Ltd., London, GB; Class L03, AN 1991-205288 XP002265885 & KR 9 004 232 B (SAMSUNG ELECTRON DE) 18 June 1990 (1990-06-18) * abstract *	1	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 January 2004	Examiner Drouot, M-C
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 13 0097

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
DE 19617942	C	26-06-1997	DE	19617942 C1	26-06-1997
US 4432948	A	21-02-1984	US	4386056 A	31-05-1983
US 3954657	A	04-05-1976	CA	1039942 A1	10-10-1978
JP 11071111	A	16-03-1999	NONE		
JP 61251514	A	08-11-1986	JP	1779836 C	13-08-1993
			JP	3031644 B	08-05-1991
KR 9004232	B	18-06-1990	KR	9004232 B1	18-06-1990

专利名称(译)	从封装材料中回收电致发光磷光体		
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其他公开文献	EP1215260A2		
外部链接	Espacenet		

摘要(译)

一种从封装的磷光体中回收基础磷光体的方法，包括选择包括磁力搅拌棒的回收容器的步骤;向回收容器中加入去离子水，第一批浓盐酸和封装的磷光体，形成搅拌悬浮液;将搅拌的悬浮液加热至约90℃约2小时;沉淀搅拌的悬浮液;用第二批盐酸和水浸析母液并将剩余的固体浆化;用去离子水倾析并洗涤剩余的固体;过滤剩余的固体，形成滤饼;将滤饼在110℃下在空气中加热足够的时间以形成干燥的滤饼;并通过-325目筛筛分干燥的滤饼，得到回收的基础磷光体。

European Patent Office		EUROPEAN SEARCH REPORT		Application Number EP 01 13 0097
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A	DE 196 17 942 C (INST TECHNOLOGIE UND UMWELTSCH) 26 June 1997 (1997-06-26) * the whole document *	1	C09K11/01	
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A	DATABASE WPI Section Ch, Week 199129 Derwent Publications Ltd., London, GB; Class L03, AN 1991-205288 XP002265885 & KR 9 004 232 B (SAMSUNG ELECTRON DE) 18 June 1990 (1990-06-18) * abstract *	1		
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CATEGORY OF CITED DOCUMENTS 1. particularly relevant if cited as prior art 2. document cited in the application 3. document cited for other reasons 4. number of the same patent family, corresponding document				