

(19)



(11)

EP 2 746 359 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
22.07.2015 Bulletin 2015/30

(51) Int Cl.:
C09K 11/02^(2006.01)

(43) Date of publication A2:
25.06.2014 Bulletin 2014/26

(21) Application number: **13197949.4**

(22) Date of filing: **18.12.2013**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
 GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
 PL PT RO RS SE SI SK SM TR**
 Designated Extension States:
BA ME

(72) Inventors:
 • **Stedel, Annette**
Cambridge, Cambridgeshire CB3 9AR (GB)
 • **Bourcet, Florence**
Cambridge, Cambridgeshire CB23 6DW (GB)
 • **Kamtekar, Kiran**
Cambridge, Cambridgeshire CB23 6DW (GB)

(30) Priority: **21.12.2012 GB 201223283**

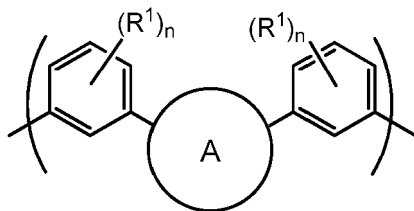
(71) Applicants:
 • **Cambridge Display Technology Limited**
Cardinal Way
Godmanchester
Cambridgeshire PE29 2XG (GB)
 • **Sumitomo Chemical Co., Ltd**
Chuo-ku, Tokyo 104-8260 (JP)

(74) Representative: **Gilani, Anwar et al**
Venner Shipley LLP
Byron House
Cambridge Business Park
Cowley Road
Cambridge CB4 0WZ (GB)

(54) **Polymer and organic light-emitting device**

(57) A composition comprising a polymer and a phosphorescent material wherein the polymer comprises repeat units of formula (I):

wherein A is a heteroaryl group containing a nitrogen atom, and A may be unsubstituted or substituted with one or more substituents;
 R¹ in each occurrence is independently a substituent;
 and
 n is 0, 1, 2, 3 or 4.



(I)

EP 2 746 359 A3



EUROPEAN SEARCH REPORT

Application Number
EP 13 19 7949

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	KAI ZHANG ET AL: "Effective Suppression of Intra- and Interchain Triplet Energy Transfer to Polymer Backbone from the Attached Phosphor for Efficient Polymeric Electrophosphorescence", CHEMISTRY OF MATERIALS, vol. 21, no. 14, 28 July 2009 (2009-07-28), pages 3306-3314, XP055195061, ISSN: 0897-4756, DOI: 10.1021/cm9008305 * Schemes 1 and 2; page 3308 - page 3312 *	1-4,7-15	INV. C09K11/02
X	JP 2008 024797 A (JSR CORP) 7 February 2008 (2008-02-07) * paragraphs [0045], [0056], [0132] * * abstract *	1-4,7-15	
A	WO 2012/052713 A1 (CAMBRIDGE DISPLAY TECH [GB]; SUMITOMO CHEMICAL CO [JP]; STEUDEL ANNETT) 26 April 2012 (2012-04-26) * examples *	1-15	
A	WO 2008/025997 A1 (CDT OXFORD LTD [GB]; SUMATION CO LTD [JP]; MALE NIGEL [GB]; PILLOW JON) 6 March 2008 (2008-03-06) * pages 10-12 * * pages 14,15 *	1-15	TECHNICAL FIELDS SEARCHED (IPC) C09K C08G C08K C08L C09D H01L
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 June 2015	Examiner Baldé, Kaisa
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	

EPO FORM 1503 03.82 (P04C01)

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

EP 13 19 7949

5

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

16-06-2015

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2008024797 A	07-02-2008	JP 5181437 B2 JP 2008024797 A	10-04-2013 07-02-2008
WO 2012052713 A1	26-04-2012	CN 103180989 A CN 103180991 A DE 112011103507 T5 EP 2630675 A1 GB 2485001 A GB 2497904 A JP 2013546173 A JP 2014508394 A KR 20130129949 A KR 20130129950 A US 2013270535 A1 US 2013299787 A1 WO 2012052704 A2 WO 2012052713 A1	26-06-2013 26-06-2013 16-01-2014 28-08-2013 02-05-2012 26-06-2013 26-12-2013 03-04-2014 29-11-2013 29-11-2013 17-10-2013 14-11-2013 26-04-2012 26-04-2012
WO 2008025997 A1	06-03-2008	CN 101522857 A CN 103325962 A EP 2057249 A1 JP 5721948 B2 JP 2010503193 A KR 20090047547 A TW 200823179 A US 2010013377 A1 US 2014335638 A1 WO 2008025997 A1	02-09-2009 25-09-2013 13-05-2009 20-05-2015 28-01-2010 12-05-2009 01-06-2008 21-01-2010 13-11-2014 06-03-2008

15

20

25

30

35

40

45

50

55

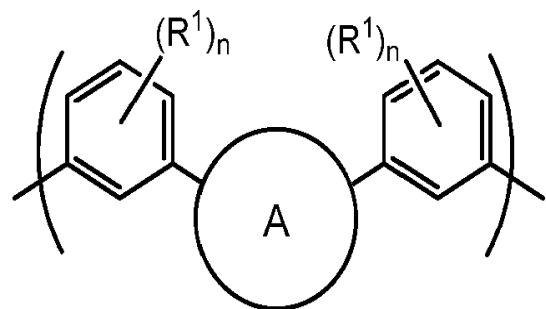
EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	聚合物和有机发光器件		
公开(公告)号	EP2746359A3	公开(公告)日	2015-07-22
申请号	EP2013197949	申请日	2013-12-18
[标]申请(专利权)人(译)	剑桥显示技术有限公司 住友化学有限公司		
申请(专利权)人(译)	剑桥显示技术有限公司 住友化学有限公司		
当前申请(专利权)人(译)	剑桥显示技术有限公司 住友化学有限公司		
[标]发明人	STEUDEL ANNETTE BOURCET FLORENCE KAMTEKAR KIRAN		
发明人	STEUDEL, ANNETTE BOURCET, FLORENCE KAMTEKAR, KIRAN		
IPC分类号	C09K11/02		
CPC分类号	H01L51/0043 C08G61/12 C08G61/122 C08G73/0644 C08G2261/135 C08G2261/1412 C08G2261/148 C08G2261/1624 C08G2261/3142 C08G2261/3162 C08G2261/411 C08G2261/95 C08K5/0091 C08L65/00 C09D179/04 C09K11/06 C09K2211/1466 H01L51/0039 H01L51/0085 H01L51/009 H01L51/5016 H05B33/10		
优先权	2012023283 2012-12-21 GB		
其他公开文献	EP2746359A2 EP2746359B1		
外部链接	Espacenet		

摘要(译)

1.一种组合物，其包含聚合物和磷光材料，其中所述聚合物包含式(I)的重复单元：其中A是含有氮原子的杂芳基，并且A可以是未取代的或被一个或多个取代基取代；每次出现的R1独立地是取代基；n为0,1,2,3或4。



(I)