

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 158 839 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
11.01.2006 Bulletin 2006/02

(51) Int Cl.:
H05B 33/14 (2006.01) **C08F 38/00** (2006.01)
C09K 11/06 (2006.01)

(43) Date of publication A2:
28.11.2001 Bulletin 2001/48

(21) Application number: **01303861.7**

(22) Date of filing: **27.04.2001**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR
 Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **27.04.2000 JP 2000128364**
22.09.2000 JP 2000288692
24.04.2001 JP 2001125359

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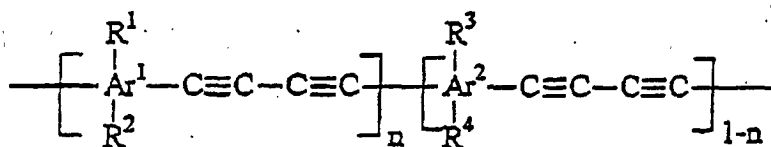
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(54) **Organic luminous material and organic light-emitting device**

(57) An organic EL device employing polymer material includes a structure in which a luminous layer formed of a polymer indicated by



is put between a lower electrode and an upper electrode.

In the above formula, Ar¹, Ar², which can be the same or different, denote arylene groups, R¹, R², R³, R⁴ denote substituents, and n denotes the copolymerization ratio. The flatness of the luminous layer can be improved and the solubility of the luminous layer constituent material can be enhanced.

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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 3861

DOCUMENTS CONSIDERED TO BE RELEVANT			
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X	X.T. TAO ET.AL.: "Novel main-chain poly-carbazoles as hole and electron transport materials in polymer light-emitting diodes" APPL. PHYS. LETT., vol. 71, no. 14, 1997, pages 1921-1923, XP002339411 * the whole document *	1-10, 13, 14, 21	H05B33/14 C08F38/00 C09K11/06
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 21 October 2005	Examiner Doslik, N
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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EPO FORM 1503 03 82 (P04C01)



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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 3861

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Place of search Munich		Date of completion of the search 21 October 2005	Examiner Doslik, N	
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EPO FORM 1503 03/82 (P04C01)



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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 3861

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)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 21 October 2005	Examiner Doslik, N
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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EPO FORM 1503 03.02 (P04C01)



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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 3861

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)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 21 October 2005	Examiner Doslik, N
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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EPO FORM 1503 03/92 (P04C01)



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Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-10

Organic light-emitting device comprising a lower electrode, a luminous layer made of a polymer of formula (1) and an upper electrode.

1.1. claims: 13-14, 21(partially)

An organic luminous material made of a polymer of formula (4).

2. claims: 11-12, 21(partially)

An organic luminous material made of a polymer of formula (3).

3. claims: 15-17, 21(partially)

An organic luminous material made of a polymer of formula (5).

4. claims: 18-20, 21(partially)

An organic luminous material made of a polymer of formula (6).

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.

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

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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.

21-10-2005

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专利名称(译)	有机发光材料和有机发光器件		
公开(公告)号	EP1158839A3	公开(公告)日	2006-01-11
申请号	EP2001303861	申请日	2001-04-27
[标]申请(专利权)人(译)	富士通株式会社		
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当前申请(专利权)人(译)	FUJITSU LIMITED		
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IPC分类号	H05B33/14 C08F38/00 C09K11/06 H01L51/50 C08G61/02 H01L51/30		
CPC分类号	C08F38/00 C08G61/02 C09K11/06 C09K2211/1092 C09K2211/1425 H01L51/0035 H01L51/0043 H01L51/5012 Y10S428/917		
优先权	2000128364 2000-04-27 JP 2000288692 2000-09-22 JP 2001125359 2001-04-24 JP		
其他公开文献	EP1158839A2 EP1158839B1		
外部链接	Espacenet		

摘要(译)

采用聚合物材料的有机EL器件包括这样的结构，其中由所示聚合物形成的发光层置于下电极和上电极之间。在上式中，Ar 1，Ar 2可以相同或不同，表示亚芳基，R 1，R 2，R 3，R 4表示取代基，n表示共聚比。可以改善发光层的平坦度，并且可以提高发光层构成材料的溶解性。

