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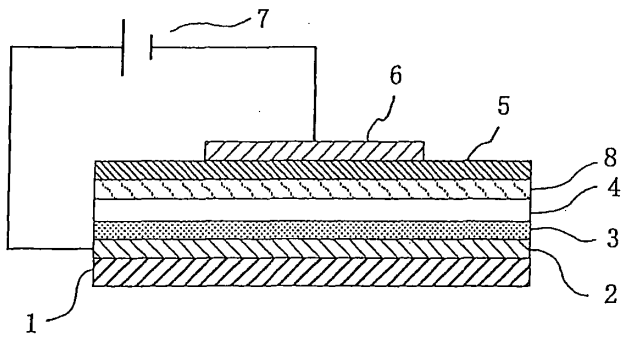
(54) **Phosphorescent polymer and production process thereof, organic electroluminescence device, and metal complex-containing compound and production process thereof**

(57) The invention provides a phosphorescent polymer that has excellent luminescent properties and capable of forming a film by a wet method, and an organic electroluminescence device that has excellent luminescent properties and durability, can achieve long service life and can be easily produced. The invention also provides a novel metal complex-containing compound used as a monomer for providing the phosphorescent polymer that has excellent luminescent properties and capable of forming a film by a wet method, and a production process thereof.

The phosphorescent polymer has a metal complex-containing group having a phenylpyridine structure which is bonded to a main chain containing an aromatic compound group. The organic electroluminescence device has a luminescent layer formed by the phosphorescent polymer.

The metal complex-containing compound has a metal complex-containing group having a phenylpyridine structure which is bonded to an aromatic compound having two reactive functional groups.

Fig. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 05 00 9218

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	US 2003/186080 A1 (KAMATANI JUN [JP] ET AL) 2 October 2003 (2003-10-02) * paragraphs [0097] - [0100]; compounds 11, 9 * * paragraphs [0138] - [0139] * * paragraph [0058]; example 7 * -----	1-2,4-8	INV. C09K11/06 C08G61/10 H01L51/30 C07F15/00
X	DE 102 24 617 A1 (STARCK H C GMBH [DE]) 24 December 2003 (2003-12-24) * compounds B-II-1, B-II-3, B-II-4 * -----	1-8	

TECHNICAL FIELDS SEARCHED (IPC)

C09K
H01L
C07F

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
The Hague	15 March 2010	Vanier, Cécile

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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Application Number
EP 05 00 9218

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due 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 those claims for which no payment was due.

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:

1-8

☐ The present supplementary 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 (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 05 00 9218

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: 1-8

   Phosphorescent polymer having a main chain comprising an aromatic scaffold bonded to a metal complex via phenylpyridine ligand and process for producing said polymer.

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2. claims: 9-21

   Metal complex containing compound with phenylpyridine ligand bonded to aromatic compound having 2 reactive functional groups, specific chemical structures thereof and and processes for producing said structures

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 05 00 9218

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.

15-03-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003186080 A1	02-10-2003	CN 1538986 A	20-10-2004
		EP 1426399 A1	09-06-2004
		WO 03022908 A1	20-03-2003
DE 10224617 A1	24-12-2003	NONE	

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)	磷光聚合物及其制备方法，有机电致发光器件和含金属络合物的化合物及其制备方法		
公开(公告)号	EP1591511A3	公开(公告)日	2010-07-21
申请号	EP2005009218	申请日	2005-04-27
[标]申请(专利权)人(译)	杰瑟股份有限公司		
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IPC分类号	C09K11/06 C08G61/10 H01L51/30 C07F15/00 H01L51/00 H01L51/50 H05B33/14		
CPC分类号	H05B33/14 C08G61/10 C08G2261/1526 C08G2261/3142 C08G2261/5242 C09K11/06 C09K2211/1416 C09K2211/1425 C09K2211/1433 C09K2211/1466 C09K2211/185 H01L51/0039 H01L51/0062 H01L51/0085 H01L51/5016		
代理机构(译)	TBK专利		
优先权	2004174372 2004-06-11 JP 2004174373 2004-06-11 JP 2004143606 2004-05-13 JP 2004132508 2004-04-28 JP		
其他公开文献	EP1591511A2		
外部链接	Espacenet		

摘要(译)

本发明提供一种磷光聚合物，其具有优异的发光性能并且能够通过湿法形成膜，并且有机电致发光器件具有优异的发光性能和耐久性，可以实现长的使用寿命并且可以容易地制造。本发明还提供一种新型含金属配合物的化合物及其制备方法，该化合物用作提供具有优异发光性能并且能够通过湿法形成膜的磷光聚合物的单体。磷光聚合物具有含金属配合物的基团，该基团具有苯基吡啶结构，该基团与含有芳族化合物基团的主链键合。有机电致发光器件具有由磷光聚合物形成的发光层。含金属配合物的化合物具有含有金属配合物的基团，该基团具有苯基吡啶结构，该基团与具有两个反应性官能团的芳族化合物键合。

Fig. 1