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(71) Applicant: **CANON KABUSHIKI KAISHA**
Tokyo (JP)

(72) Inventors:
 • **Takiguchi, Takao**
Ohta-ku, Tokyo (JP)
 • **Okada, Shinjiro**
Ohta-ku, Tokyo (JP)

- **Tsuboyama, Akira**
Ohta-ku, Tokyo (JP)
- **Miura, Seishi**
Ohta-ku, Tokyo (JP)
- **Moriyama, Takashi**
Ohta-ku, Tokyo (JP)
- **Kamatani, Jun**
Ohta-ku, Tokyo (JP)
- **Furugori, Manabu**
Ohta-ku, Tokyo (JP)

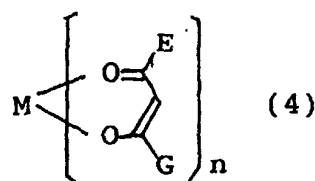
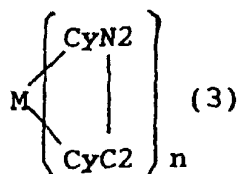
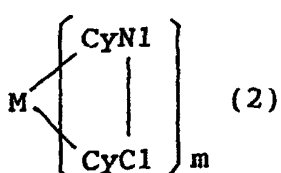
(74) Representative:
Leson, Thomas Johannes Alois, Dipl.-Ing.
Tiedtke-Bühling-Kinne & Partner GbR,
TBK-Patent,
Bavariaring 4
80336 München (DE)

(54) **Metal coordination compound, luminescence device and display apparatus**

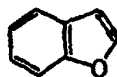
(57) An electroluminescence device having a layer containing a specific metal coordination compound is provided. The metal coordination compound is represented by formula (1) below:



wherein M is a metal atom of Ir, Pt, Rh or Pd; L and L' are mutually different bidentate ligands; m is 1, 2 or 3 and n is 0, 1 or 2 with the proviso that m+n is 2 or 3; a partial structure ML_m is represented by formula (2) shown below and a partial structure ML'_n is represented by formula (3) or (4) shown below:



at least one of the optional substituent(s) of the cyclic groups, and the cyclic groups CyC1 and CyC2 includes a benzofuran structure capable of having a substituent represented by the following formula (5):



The metal coordination compound having the benzofuran structure is effective in providing high-efficiency luminescence and long-term high luminance.



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PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention EP 02 00 5738 shall be considered, for the purposes of subsequent proceedings, as the European search report

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)
E	EP 1 191 612 A (CANON KK) 27 March 2002 (2002-03-27) * the whole document * ---	1-10, 12-14	H01L51/30 C07F15/00 C09K11/06
E	EP 1 191 614 A (CANON KK) 27 March 2002 (2002-03-27) * the whole document * ---	1-10, 12-14	
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E	US 2003/059646 A1 (FURUGORI MANABU ET AL) 27 March 2003 (2003-03-27) Compounds 722 (Table 1-13), 809-816 (Table 1-15). ---	1-14	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			C07F H01L C09K
-/--			
INCOMPLETE SEARCH			
The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search		Date of completion of the search	Examiner
MUNICH		2 October 2003	Koessler, J-L
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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INCOMPLETE SEARCH
SHEET C

Application Number
EP 02 00 5738

Claim(s) searched completely:
11

Claim(s) searched incompletely:
1-10,12-14

Reason for the limitation of the search:

Present claims 1-9, 12, 14 relate to an extremely large number of possible compounds/apparatus. Support within the meaning of Article 84 EPC and/or disclosure within the meaning of Article 83 EPC is to be found, however, for only a very small proportion of the compounds/apparatus claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds/apparatus to compounds of formula (1) wherein M is Ir and ML'n is represented by formula (3).



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PARTIAL EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
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X	WO 01 08230 A (UNIV PRINCETON ;UNIV SOUTHERN CALIFORNIA (US)) 1 February 2001 (2001-02-01) * the whole document *	1-10, 12-14	

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

EP 02 00 5738

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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02-10-2003

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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)	金属配位化合物，发光装置和显示装置		
公开(公告)号	EP1244155A3	公开(公告)日	2003-11-26
申请号	EP2002005738	申请日	2002-03-13
[标]申请(专利权)人(译)	佳能株式会社		
申请(专利权)人(译)	佳能株式会社		
当前申请(专利权)人(译)	佳能株式会社		
[标]发明人	TAKIGUCHI TAKAO OKADA SHINJIRO TSUBOYAMA AKIRA MIURA SEISHI MORIYAMA TAKASHI KAMATANI JUN FURUGORI MANABU		
发明人	TAKIGUCHI, TAKAO OKADA, SHINJIRO TSUBOYAMA, AKIRA MIURA, SEISHI MORIYAMA, TAKASHI KAMATANI, JUN FURUGORI, MANABU		
IPC分类号	H01L51/50 C07F15/00 C09K11/06 H01L51/00 H01L51/30		
CPC分类号	H01L51/0084 C07F15/0033 C09K11/06 C09K2211/1007 C09K2211/1011 C09K2211/1014 C09K2211/1029 C09K2211/1088 C09K2211/185 H01L51/0085 H01L51/0087 H01L51/5012 Y10S428/917		
优先权	2001072665 2001-03-14 JP 2002043536 2002-02-20 JP		
其他公开文献	EP1244155A2 EP1244155B1		
外部链接	Espacenet		

摘要(译)

提供了一种具有含有特定金属配位化合物的层的电致发光器件。金属配位化合物由下式(1)表示： $ML_mL'_n$ (1)，其中M是Ir, Pt, Rh或Pd的金属原子；L和L'是相互不同的二齿配体；m为1,2或3，n为0,1或2，条件是m+n为2或3；部分结构ML_m由下面所示的式(2)表示，部分结构ML'_n由下面所示的式(3)或(4)表示：至少一个环状基团的任取代基，和环状基团CyC1和CyC2包括能够具有由下式(5)表示的取代基的苯并咪唑结构：具有苯并咪唑结构的金属配位化合物可有效地提供高效发光和长期高亮度。

