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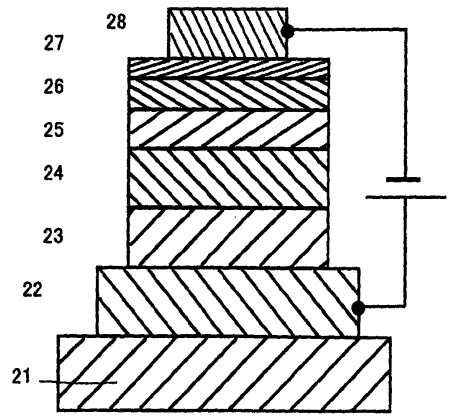
(54) Organic electroluminescent material and device made therefrom

(57) This invention relates to organic electroluminescent elemental devices (organic EL devices) of excellent durability and to organic EL materials useful for such organic EL devices. The organic EL material of this invention comprises a tertiary amine containing 2 to 4 nitrogen atoms each forming a triarylamine wherein the organic electroluminescent material comprises 1 wt.% or less of impurity compounds (A) possessing one less nitrogen atom forming a triarylamine group than said tertiary aryl amine compound and/or 2 wt.% or less of impurity compounds (B) possessing one more nitrogen atom forming a diarylamino group than said tertiary aryl amine compound. The organic electrominescent material can be used in an organic EL device. Some of such tertiary aryl amines are selected from compounds represented by
$(Ar_1Ar_2\ N\text{-})_2\text{-}Ar_3$, $(Ar_1Ar_2N\text{-}\ Ar_3\text{-})_3\text{-}N$, $(Ar_1Ar_2N\text{-}Ar_3\text{-})_2\text{-}N\text{-}Ar_4$ and $(Ar_1Ar_2\ N\text{-})_4\text{-}Ar_5$
(wherein Ar_1, Ar_2 and Ar_4 are independently monovalent aryl groups, Ar_3 is independently a divalent aryl group and Ar_5 is a tetravalent aryl group). The organic EL materials of this invention are used, for example, as hole transporting layer in organic EL devices.

FIG. 2



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EUROPEAN SEARCH REPORT

Application Number
EP 02 25 0887

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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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TECHNICAL FIELDS SEARCHED (Int.Cl.7)
C09K
H05B
H01L
C07C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	28 October 2004	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
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 02 25 0887

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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28-10-2004

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

专利名称(译)	有机电致发光材料和由其制成的器件		
公开(公告)号	EP1231252A3	公开(公告)日	2004-12-29
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其他公开文献	EP1231252A2		
外部链接	Espacenet		

摘要(译)

本发明涉及具有优异耐久性的有机电致发光元件器件（有机EL器件）和用于这种有机EL器件的有机EL材料。本发明的有机EL材料包含含有2-4个氮原子的叔胺，各自形成三芳基胺，其中有机电致发光材料包含1wt％或更少的杂质化合物（A），其具有少于一个氮原子形成三芳胺基团，比所述叔芳基胺化合物和/或2重量％或更少的杂质化合物（B）具有比所述叔芳基胺化合物更多的氮原子，形成二芳基氨基。有机电子发光材料可用于有机EL器件中。一些这样的叔芳基胺选自由（Ar1Ar2N）2-Ar3，（Ar1Ar2N-Ar3-

）3-N，（Ar1Ar2N-Ar3-）2-N-Ar4和（Ar1Ar2 N-）4-表示的化合物。Ar5（其中Ar1，Ar2和Ar4独立地是一价芳基，Ar3独立地是二价芳基，Ar5是四价芳基）。本发明的有机EL材料例如用作有机EL器件中的空穴传输层。

FIG. 2