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(71) Applicant: **NITTO DENKO CORPORATION**
Osaka (JP)

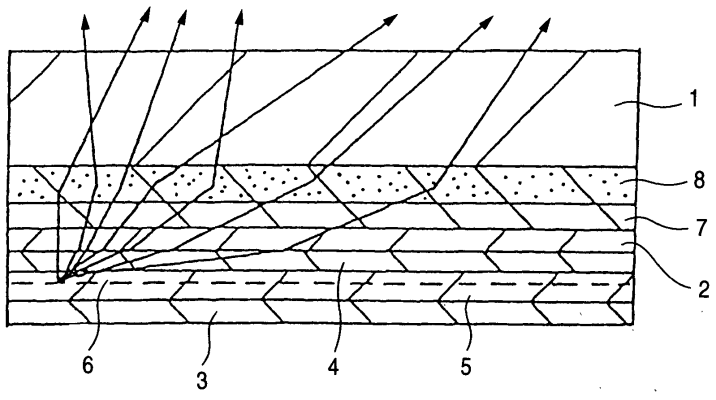
(72) Inventors:
- **Juni, Noriyuki**
  Ibaraki-shi
  Osaka (JP)
- **Nakamura, Toshitaka**
  Ibaraki-shi
  Osaka (JP)
- **Hotta, Yuji**
  Ibaraki-shi
  Osaka (JP)

(74) Representative: **Grünecker, Kinkeldey,**
Stockmair & Schwanhäusser
Leopoldstrasse 4
80802 München (DE)

(54) **Electroluminescence device, planar light source and display using the same**

(57) The present invention provides an organic electroluminescence device including an organic layer comprising an emissive layer; a pair of electrodes comprising an anode and a cathode, and sandwiching the organic layer, wherein at least one of the electrodes is transparent; a transparent layer provided adjacent to a light extracting surface of the transparent electrode; and a region substantially disturbing reflection and refraction angle of light provided adjacent to a light extracting surface of the transparent layer or in an interior of the transparent layer, wherein the transparent layer has a refractive index substantially equal to or more than the refractive index of the emissive layer.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 04 02 1155

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	LEE YONG-JAE ET AL: "A high-extraction-efficiency nanopatterned organic light-emitting diode", APPLIED PHYSICS LETTERS, AIP, AMERICAN INSTITUTE OF PHYSICS, MELVILLE, NY, US, vol. 82, no. 21, 26 May 2003 (2003-05-26), pages 3779-3781, XP012034228, ISSN: 0003-6951, DOI: 10.1063/1.1577823 * figures 1,3 *	1,2,4, 10-12	INV. H01L51/20 H01L27/00 G02B5/30 G02B5/02 H01L51/52
X Y	US 2003/127973 A1 (WEAVER MICHAEL STUART [US] ET AL) 10 July 2003 (2003-07-10) * paragraphs [0025], [0049]; figure 3 * * paragraphs [0031], [0035] * * paragraph [0039] - paragraph [0041] *	1-3,10, 12,13 1,4	
X Y	WO 98/17083 A1 (PHILIPS ELECTRONICS NV [NL]; PHILIPS NORDEN AB [SE]) 23 April 1998 (1998-04-23) * page 8, line 15 - line 19; figure 1D * * page 6, line 22 - line 29 * * page 9, line 25 - page 10, line 8 *	1-3,9, 10,12 1,4	TECHNICAL FIELDS SEARCHED (IPC)
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Y	US 2003/184219 A1 (DUGGAL ANIL RAJ [US] ET AL) 2 October 2003 (2003-10-02) * page 5, column 1, line 23 - line 47 *	5	

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

Place of search	Date of completion of the search	Examiner
Munich	7 March 2012	Pusch, Catharina

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
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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
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EPO FORM 1503 03.82 (P04C01)

3

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EUROPEAN SEARCH REPORT

Application Number
EP 04 02 1155

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	EP 0 504 910 A2 (TOSOH CORP [JP]) 23 September 1992 (1992-09-23) * column 7, line 38 - line 56 * -----	5	
			TECHNICAL FIELDS SEARCHED (IPC)

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

Place of search	Date of completion of the search	Examiner
Munich	7 March 2012	Pusch, Catharina

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
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3

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Application Number
EP 04 02 1155

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:

1-13

☐ 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 04 02 1155

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: 1-13

   high refractive scattering/diffusing layer

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2. claims: 14-23

   scattering/diffusing layer comprises particles of different sizes

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 02 1155

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.

07-03-2012

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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)	电致发光装置，平面光源和使用该装置的显示器		
公开(公告)号	EP1548856A3	公开(公告)日	2012-08-08
申请号	EP2004021155	申请日	2004-09-06
[标]申请(专利权)人(译)	日东电工株式会社		
申请(专利权)人(译)	日东电工株式会社		
当前申请(专利权)人(译)	日东电工株式会社		
[标]发明人	JUNI NORIYUKI NAKAMURA TOSHITAKA HOTTA YUJI		
发明人	JUNI, NORIYUKI NAKAMURA, TOSHITAKA HOTTA, YUJI		
IPC分类号	H01L51/20 H01L27/00 H05B33/14 H01L51/00 H01L51/30 H01L51/52 H05B33/20 H05B33/22		
CPC分类号	H01L51/5275 G02B5/0242 G02B5/0278 H01L51/0052 H01L51/0059 H01L51/0062 H01L51/0078 H01L51/0081 H01L51/5268 H01L2251/5369 Y10S428/917 Y10T428/24942 Y10T428/25		
代理机构(译)	GRÜNECKER，KINKELDEY，STOCKMAIR & SCHWANHÄUSSER		
审查员(译)	PUSCH，凯萨琳娜		
优先权	2003433726 2003-12-26 JP 2004011452 2004-01-20 JP		
其他公开文献	EP1548856A2		
外部链接	Espacenet		

摘要(译)

本发明提供一种有机电致发光器件，包括含有发光层的有机层;一对电极，包括阳极和阴极，并夹着有机层，其中至少一个电极是透明的;邻近透明电极的光提取表面设置的透明层;和一个基本上干扰光的反射和折射角的区域，该区域提供在透明层的光提取表面附近或透明层的内部，其中透明层的折射率基本上等于或大于透明层的折射率。发光层。

FIG. 1