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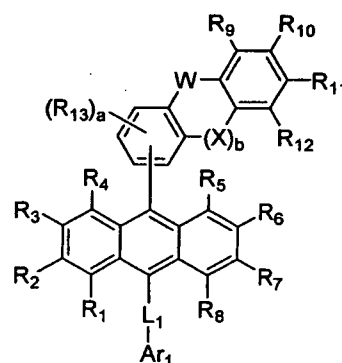
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(54) **Novel organic electroluminescent compounds and organic electroluminescent device using the same**

(57) The present invention relates to novel organic electroluminescent compounds, and organic electroluminescent devices employing the same as electroluminescent material. Specifically, the organic electroluminescent compounds according to the invention are **characterized in that** they are represented by Chemical Formula (1).

Chemical Formula 1



Since the organic electroluminescent compounds according to the invention have good luminous efficiency and excellent life property of material, OLED's having very good operation life can be manufactured therefrom.



EUROPEAN SEARCH REPORT

Application Number
EP 09 25 0820

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	WO 2006/128800 A (CIBA SC HOLDING AG [CH]; TANABE JUNICHI [JP]; OKA HIDETAKA [JP]; YAMAM) 7 December 2006 (2006-12-07) * page 18, compounds B-13 to B-15, page 32, compounds A-35 to A-37, page 48, last paragraph, page 55, lines 15-16, Examples, claims *	1-9	INV. C09K11/06 H05B33/14 C07C15/60 H01L51/50 H01L51/00
X	EP 1 748 045 A (TORAY INDUSTRIES [JP]) 31 January 2007 (2007-01-31) * page 9, compounds 3, 6, page 12, compounds 25 and 27, page 13, compounds 36 to 38, page 25, paragraph [0057], Examples, claims *	1-8	
X	WO 2007/021117 A (GRACEL DISPLAY INC [KR]; HYUN SEUNG-HAK [KR]; LEE JEA-SUNG [KR]; SI SA) 22 February 2007 (2007-02-22) * page 19, compounds 15 to 18, page 21, compounds 25 and 26, page 23, compounds 30 and 33, Examples, claims *	1-8	
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The present search report has been drawn up for all claims			
4	Place of search Munich	Date of completion of the search 5 February 2010	Examiner Nemes, Csaba A.
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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EUROPEAN SEARCH REPORT

Application Number
EP 09 25 0820

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	EP 1 221 434 A1 (MITSUI CHEMICALS INC [JP]) 10 July 2002 (2002-07-10) * page 14, compound A-7, page 18, compounds A 26 and A-27, page 19, compounds A-28, A-30 and A-31, page 20, compounds A-33 to A-36, page 43, compounds C-26 to C-30, page 44, compound C-35, page 45, compounds C-36 to C-38, page 56, compound E-2, page 78, compound H-11, page 147, paragraph [0068], page 148, paragraph [0084], page 149, paragraphs [0092] to [0096], Examples 198 to 205, claims *	1-8	
X	JP 2007 227717 A (TOYO INK MFG CO) 6 September 2007 (2007-09-06) * abstract, compounds on pages 9-19, page 28, compounds 62-64, page 36, paragraph [0072] *	1-8	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
4	Place of search Munich	Date of completion of the search 5 February 2010	Examiner Nemes, Csaba A.
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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EP 09 25 0820

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:
- 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).

**LACK OF UNITY OF INVENTION
SHEET B**Application Number
EP 09 25 0820

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

Organic electroluminescent compound represented by Chemical Formula 2, organic electroluminescent device comprising an electroluminescent layer comprising said compound.

2. claims: 1-8

Organic electroluminescent compound represented by Chemical Formula 3, organic electroluminescent device comprising an electroluminescent layer comprising said compound.

3. claims: 1-8

Organic electroluminescent compound represented by Chemical Formula 4, organic electroluminescent device comprising an electroluminescent layer comprising said compound.

4. claims: 1-8

Organic electroluminescent compound represented by Chemical Formula 5, organic electroluminescent device comprising an electroluminescent layer comprising said compound.

5. claim: 9

Organic solar cell comprising an organic electroluminescent compound represented by Chemical Formula 1.

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

EP 09 25 0820

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.

05-02-2010

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专利名称(译)	新型机电致发光化合物和使用其的机电致发光器件		
公开(公告)号	EP2108689A3	公开(公告)日	2010-03-17
申请号	EP2009250820	申请日	2009-03-24
申请(专利权)人(译)	GRACEL显示增量.		
当前申请(专利权)人(译)	GRACEL显示增量.		
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发明人	LEE, MI AE KIM, JIN HO CHO, YOUNG JUN KWON, HYUCK JOO KIM, BONG OK KIM, SUNG MIN YOON, SEUNG SOO KIM, CHI SIK		
IPC分类号	C09K11/06 H05B33/14 C07C15/60 H01L51/50 H01L51/00		
CPC分类号	C09K11/06 C07C13/547 C07C13/567 C07C13/615 C07C13/66 C07C13/72 C07C22/08 C07C25/22 C07C43/21 C07C211/58 C07C211/61 C07C255/50 C07C2602/08 C07C2602/10 C07C2603/04 C07C2603/18 C07C2603/20 C07C2603/24 C07C2603/26 C07C2603/40 C07C2603/42 C07C2603/48 C07C2603/50 C07C2603/52 C07C2603/74 C07C2603/94 C07D209/82 C07D213/06 C07D215/06 C07D217/02 C07D223/26 C07D223/28 C07D235/18 C07D239/26 C07D241/12 C07D241/42 C07D241 /46 C07D251/20 C07D265/38 C07D277/66 C07D279/22 C07D311/80 C07D333/76 C07D471/04 C07F7 /0807 C07F7/0816 C07F9/65683 C09K2211/1011 H01L51/0058 H05B33/14 Y02E10/549		
优先权	1020080030645 2008-04-02 KR		
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摘要(译)

本发明涉及新型机电致发光化合物，以及采用其作为电致发光材料的机电致发光器件。具体地，根据本发明的机电致发光化合物的特征在于它们由化学式 (1) 表示。由于根据本发明的机电致发光化合物具有良好的发光效率和优异的材料寿命，因此可以由其制造具有非常好的使用寿命的OLED。

Chemical Formula 1

