

**SUPPLEMENTARY
 EUROPEAN SEARCH REPORT**

Application Number
 EP 15 78 9715

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 2011/278555 A1 (INOUE TETSUYA [JP] ET AL) 17 November 2011 (2011-11-17) * paragraphs [0140], [0276] * -----	1-6	INV. H01L51/54 C09K11/06 H01L27/32
			TECHNICAL FIELDS SEARCHED (IPC)
			H01L
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			
Place of search		Date of completion of the search	Examiner
Munich		14 December 2017	Wolfbauer, Georg
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			

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

EP 15 78 9715

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.

14-12-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011278555 A1	17-11-2011	CN 102421772 A	18-04-2012
		CN 102439004 A	02-05-2012
		CN 104592206 A	06-05-2015
		EP 2415769 A1	08-02-2012
		EP 2423209 A1	29-02-2012
		JP 5074627 B2	14-11-2012
		JP 5390728 B1	15-01-2014
		JP 5405630 B2	05-02-2014
		JP 5562970 B2	30-07-2014
		JP 2013030781 A	07-02-2013
		JP 2014040423 A	06-03-2014
		JP W02011132683 A1	18-07-2013
		JP W02011132684 A1	18-07-2013
		KR 20120034648 A	12-04-2012
		KR 20120057561 A	05-06-2012
		KR 20120127746 A	23-11-2012
		TW 201141989 A	01-12-2011
		TW 201141990 A	01-12-2011
		US 2011278555 A1	17-11-2011
		US 2011279020 A1	17-11-2011
		US 2012138911 A1	07-06-2012
		US 2012138912 A1	07-06-2012
		US 2015008423 A1	08-01-2015
US 2015228912 A1	13-08-2015		
WO 2011132683 A1	27-10-2011		
WO 2011132684 A1	27-10-2011		

专利名称(译)	多组分主体材料和包含其的有机电致发光器件		
公开(公告)号	EP3140367A4	公开(公告)日	2018-01-24
申请号	EP2015789715	申请日	2015-05-07
[标]申请(专利权)人(译)	罗门哈斯电子材料有限公司		
申请(专利权)人(译)	罗门哈斯电子材料KOREA LTD.		
当前申请(专利权)人(译)	罗门哈斯电子材料KOREA LTD.		
[标]发明人	AHN HEE CHOON KIM YOUNG KWANG MOON DOO HYEON LEE SU HYUN KIM CHI SIK LEE SEON WOO JUN JI SONG PARK KYOUNG JIN KIM NAM KYUN CHO YOUNG JUN CHOI KYUNG HOON SHIM JAE HOON DOH YOO JIN		
发明人	AHN, HEE-CHOON KIM, YOUNG-KWANG MOON, DOO-HYEON LEE, SU-HYUN KIM, CHI-SIK LEE, SEON-WOO JUN, JI-SONG PARK, KYOUNG-JIN KIM, NAM-KYUN CHO, YOUNG-JUN CHOI, KYUNG-HOON SHIM, JAE-HOON DOH, YOO-JIN		
IPC分类号	C09K11/06 H01L27/32 H01L51/54		
CPC分类号	C09K11/025 C09K11/06 C09K2211/1007 C09K2211/1029 C09K2211/185 H01L51/0067 H01L51/0072 H01L51/0073 H01L51/0074 H01L51/5016 H01L2251/5384 H01L51/0071 H01L51/0085		
代理机构(译)	MCLEAN , CRAIG SUTHERLAND		
优先权	1020140053997 2014-05-07 KR 1020150063037 2015-05-06 KR		
其他公开文献	EP3140367A1 EP3140367B1		
外部链接	Espacenet		
摘要(译)			

本发明涉及一种有机电致发光器件，其包括在阳极和阴极之间的至少一个发光层，其中所述发光层包含主体和磷光掺杂剂；宿主由多组分宿主化合物组成；至少第一种多组分主体化合物的主体化合物是含有吡啶的双咪唑衍生物，第二种主体化合物是含有含氮杂芳基的咪唑衍生物。根据本发明，与使用一种主体组分的常规装置相比，使用多组分主体化合物的有机电致发光器件具有高效率 and 长寿命。



**SUPPLEMENTARY
EUROPEAN SEARCH REPORT**

Application Number:
EP 15 78 9715

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Classification of documents with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2011/278555 A1; (INQUE TETSUYA [JP] ET AL) 17 November 2011 (2011-11-17) * paragraphs [0140] - [0270] *	1-6	INT. H01L51/54 C09K11/06 H01L27/32
			TECHNICAL FIELD SEARCHED (IPC)
			H01L
The applicant's search report has been filed on the last day of the time available for the start of the search.			
1	Munich	14 December 2017	Wolfdauer, Georg
<p>1. Category of cited documents:</p> <p>X: Document cited for prior art, where appropriate, in the description of the invention.</p> <p>Y: Document cited for prior art, where appropriate, in the claims of the invention.</p> <p>Z: Document cited for other reasons.</p> <p>W: Document cited for other reasons.</p> <p>A: Document cited for other reasons.</p> <p>B: Document cited for other reasons.</p> <p>C: Document cited for other reasons.</p> <p>D: Document cited for other reasons.</p> <p>E: Document cited for other reasons.</p> <p>F: Document cited for other reasons.</p> <p>G: Document cited for other reasons.</p> <p>H: Document cited for other reasons.</p> <p>I: Document cited for other reasons.</p> <p>J: Document cited for other reasons.</p> <p>K: Document cited for other reasons.</p> <p>L: Document cited for other reasons.</p> <p>M: Document cited for other reasons.</p> <p>N: Document cited for other reasons.</p> <p>O: Document cited for other reasons.</p> <p>P: Document cited for other reasons.</p> <p>Q: Document cited for other reasons.</p> <p>R: Document cited for other reasons.</p> <p>S: Document cited for other reasons.</p> <p>T: Document cited for other reasons.</p> <p>U: Document cited for other reasons.</p> <p>V: Document cited for other reasons.</p> <p>W: Document cited for other reasons.</p> <p>X: Document cited for other reasons.</p> <p>Y: Document cited for other reasons.</p> <p>Z: Document cited for other reasons.</p>			