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(54) **Liquid crystal display device**

(57) A liquid crystal display device comprising first and second polarizing elements of which transmission axes are perpendicular to each other, and, disposed between the polarizing elements, a liquid crystal layer vertically aligned in a black state, and first and second optically anisotropic layer is disclosed. In the liquid crystal display device, the first optically anisotropic layer is a biaxial optically anisotropic layer of which in-plane retar-

ation (R_e) and thickness-direction retardation (R_{th}) are larger at a longer wavelength range within a range of from 400 nm to 700 nm, and the second optically anisotropic layer satisfies $0 < |R_e(550)| < 10 \text{ nm}$ and $|R_{th}(550)| / |R_e(550)| > 10$ in which $R_e(550)$ is in-plane retardation (R_e) at a wavelength of 550 nm and $R_{th}(550)$ is thickness-direction retardation at the same wavelength.

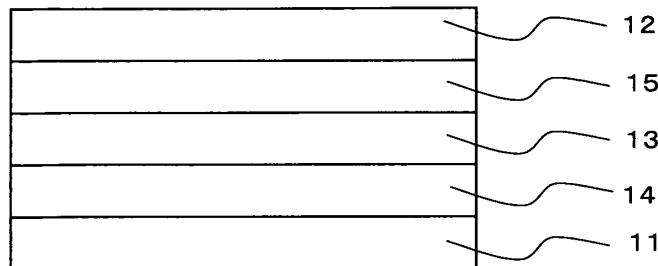


FIG. 1

EP 1 936 431 A3



EUROPEAN SEARCH REPORT

Application Number
EP 07 02 5005

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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X A	US 2003/086033 A1 (SASAKI SHINICHI [JP] ET AL) 8 May 2003 (2003-05-08) * paragraph [0003] * * paragraph [0012] * * paragraph [0017] - paragraph [0018] * * paragraph [0034] * * paragraph [0037] *	1 24	
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A	US 2006/177607 A1 (OHMORI YUTAKA [JP] ET AL) 10 August 2006 (2006-08-10) * table 1 *	17	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 December 2009	Examiner Boubal, François
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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04-12-2009

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其他公开文献	EP1936431A2		
外部链接	Espacenet		

摘要(译)

本发明公开了一种液晶显示装置，包括第一和第二偏振元件，其透射轴彼此垂直，并且设置在偏振元件之间，垂直排列成黑色状态的液晶层，以及第一和第二光学各向异性层。在液晶显示装置中，第一光学各向异性层是双轴光学各向异性层，其面内延迟 (Re) 和厚度方向延迟 (Rth) 在400nm至400nm范围内的较长波长范围内较大。700nm，第二光学各向异性层满足 $|Re(550) - 1| < 10\text{nm}$ 和 $|Rth(550) - |Re(550)| > 10$ ，其中 $Re(550)$ 是面内延迟 (Re) at 波长为 550nm， $Rth(550)$ 是相同波长下的厚度方向延迟。

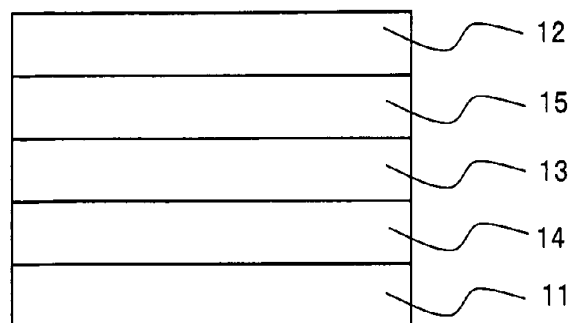


FIG. 1