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(43)2003 - 0017372  
2003 03 03(21) 10 - 2002 - 0049409  
(22) 2002 08 21

(30) JP - P - 2001 - 00251088 2001 08 22 (JP)

(71) 가 가  
5 7 1(72) 5 - 7 - 1 가 가  
5 - 7 - 1 가 가

(74)

:

(54)

, 가 ,  
 . (18), 가 ,  
 가 , ,  
 .

6

, , , ,

1 - .  
2 - .  
3 - .  
4 - , .  
5 .  
6 1 - .  
7 1 .  
8 6 7 가 .  
9 A F 1 .  
10 2 .  
11 A E 2 .  
12 3 .  
13 A F 3 .  
14 4 .  
15 A F 4 .

11 : 12 :

13 : 14 :

15 : 16 : TFT

16a : 16b :

16c : 16d :

17 : 18 :

19 : 20 :

21 : 22 :

23 : 24 :

25 : 26 :

27 : 28 :

(LCD)

가

가

가 , 가 ,

가

가

TN(twisted nematic) , STN(super twisted nematic)  
 , GH(guest - host) , PDLC(polymer dispersed liquid crystal) ,

(TFT)

/ /

(MIM)

(3)

(1)

(4)

1

(1)

(2)

(3)

(2)

(1)

(4)

(6)

ITO

(5)

가

2955277

가 , 가 , 가 , .

5 (|p) (| )

(dr)	(df)	1:2	(5)	(6)
가 ,		.	(8)	
가 가 ,	(7)	.	.	
가	(7)	.	,	

, 3 , (5) (6) 가 (11) (12)  
(10) , , . , 4  
(11) (6) (3) (13) , (11)  
가 , , .  
가 ,

가

가

가

가

가

가

가

기

가

가

(reverse tilt disclination)

가

2

가

2

가

2

가

2

가

가

가

가

가

/

, , 가

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>, (arton)SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

가

2

1

가

2

가

†

6	1	-	(11), (13)	(11)	6	(12), ,
(11)	(12)	-	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
(11)	(14), (15) (14) (16b),	(14), (16c)	(15), TFT(16), , TFT(16) (16a), (16d)	(17), (16a) (16b)	(18) (15) (15) (16d)	(19) TFT(16) 1
.	.	.	.	.	.	.
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.	.	.	.	.	.	.
.	.	.	.	.	.	.
TFT(16)	(16d) (18)	(19) (18)	(20) (21)	(17) (19) TFT(16) (19)	(20) (16d)	(17), ,
.	.	.	.	.	.	.
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.	.	.	.	.	.	.
(22)	,	,	(22)	,	(18)	(19)
(15)	(15)	(24)	(14)	.	(13)	(12)
(12)	(13)	(12)	(11)	.	(23)	(23)
(27)	(27)	(12)	.	.	.	.
(11)	,	.	.	.	(13)	,
(25)	(12)	.	.	.	(13)	,
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
(28)	(11)	(13)	(13)	(28)	(14), (25)dm	
(15),	(17)	(19)	(13)	,	(13)	
(12)	.	.	.	.	.	.
7	6		(11)	.	.	(19)
(20)	TFT(16)	,	(16d)	,	TFT(16)	
(19)	(19)	,	(18)	(21)	(19)	,
18)	(19)	,	.	,	(18),	(21)
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.

8 6 7 가 . (11) (12) (13)  
(12) CLC2, (18) , (19) (19) (12) CLC1, (18)  
(18) (CLC2 C1)가 (21) , TFT(16) C1  
, (13) 가 (19) CLC1 가 .

1/4 , 가  
가 (13) 가 ( ; retardation) /4  
/2  
가 . (13) 가 . (13) , (13)

, 8 가 가 , (21) (19) (18) (13) . (21) 가 SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub> . 가 . CLC1 CLC2 (13) (21) , (21) . (13) . , 8 (13)

9 A F 6 - , , (16a) (14) , (15)  
 . 7 (16a) (16b) , (16c) (16d) (15)  
 (16a) (16b) , (16c) (16d) (15)  
 , TFT(16) (20) (17) TFT(16)  
 , (16d) (9 A ) . , (17) TFT(16)  
 , (16d) (9 B ) . TFT(16)

(20) , ITO (19) (17) , (16d) (19)  
                   ( 9 C). (19) ,  
                   ITO가 (19) (29) 가  
                   , (21) ( 9 D ).

, (19) (21) (29) 가 , (18) AI  
 (17) ( 9 E ). (18) AI  
 . , (22) (18), 919) (21) ,  
 ( 9 F ). (11)

(26) (25) (12) , (13)  
 . (13) (11)

(13)

2 가 . 6 1 , (11) (14),  
 (15; ), TFT(16), (17), (18) (19) . (15)

$$\begin{array}{ccccccccc}
 (14) & , \text{ TFT}(16) & (15) & . & \text{TFT}(16) & (14) \\
 (16a), & (16a) & (15) & . & (16b), & (16c) \\
 (16d) & . & (23) & (23) & . & (15) \\
 & (24) & (11) & & & 
 \end{array}$$

(19) (20) TFT(16) (16d) , TFT(16)  
           (19) . (18) (21) (18) ,  
 (18) (19) . (21) , (21) (18) (21) , (13)

2 가 가 1 8 . (11)  
 (12) (13) , CLC1 (19) (12)  
 , C1 (21) (18) , CLC2 (12) (21)  
 . (CLC2 C1) 가 (18) , TFT(16)  
 가 (13) 가 (19) CLC1 가

. , (13) /2 (13) ( ) /4  
 . , (13) 가 , 가 , (13) 가  
 . , 8 가 , (18) (21) (18)  
 . (19) 가 , (13) (13)  
 . (21) 가 SiN, SiO<sub>2</sub>, . 8 CIC1  
 . CIC2 . (13)  
 . (21)

11 A E 10 - , (16a) (14) , (15) (16a)  
                  (16b) , (16c) (16d) (15) ,  
                  TFT(16) (11 A). , (17) TFT(16) ,  
                  (16d) (20) (11 B). TFT(16) ,

, (17) (19) ITO , (16d) (19) ( )  
 20) (11 C). (19) (19) , (19) ,  
 ITO가 (11 D). (21) (19) (11 E). (21) , SiO<sub>2</sub>가 CVD  
 (18) , (18) (19) (21) (22)  
 (18) , (21) (18) (18) (18) . (21) (18)  
 (18) (12) .

(18) AI , (11)  
 (13) (26) (25) , (13) (11)  
 , (13)

3 가 . 6 1 , (11) (14),  
 (15; ), TFT(16), (17), (18) (19) . (15) (14),  
 (14) , TFT(16) (15) TFT(16) (16d) (30)  
 (16a), (16b), (16c), (16d) (15) (14)  
 (16a) (23) (23) (15) (24) (11)

12 2 (16d) 2 (30)  
 SiO (21) TFT(16) (20) (16d) (18) (20) 2  
 (30) (20) (17) . (19) TFT(16) (16b) (19) ,  
 (20) , . (18) (19) (30) (16d)  
 , . (18) (19) (22) , (18) (19)  
 , (22) , (13)

(19) (20) TFT(16) (16d) , TFT(16) 2 (30)  
 (19) (19) (18) (18) (19) (21) TFT(16) 2 (18),  
 (19) (21) . 가 .

3 가 1 2 8  
 (11) (12) CLC2 (13) (18) (12) , C1 , CLC1 (19)  
 16d) 2 (30) , TFT(16) (18) 가 (CLC2 (21) (13) (18)  
 (19) CLC1 가 . C1) 가 (18)

, , (13) /2 (13) ( ) /4  
 . , (13) 가 가 가 , (13) (30) 가  
 . 8 (18) (19) 2 (16d) (21)  
 (13) CLC1 CLC2 (21) (13) SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>  
 . 8 (13) , (21) , 가

13 A F 12 -  
 . , (16a) (14) , (15) (16a)  
 , (16b), (16c) (16d) (15) ,  
 TFT(16) ( 13 A). TFT(16) (15) TFT(16) (29) 가  
 (16d) , (21) ( 13 B ).

, 2 (30) (21) (16d) (15)  
 (20) 2 ( 13 C). (17) TFT(16) (20) (17) , (16d)  
 (19) (30) (20) (16d) (17) ( 13 D). , ITO  
 (19) , ( 13 E). ITO가

, Al (18) (20) 2 (30) (17)  
 . ( 13 F). (18) , Al (19) (21) ,  
 , (22) (18), (19) (21) ,

(11) (12) , (13) (11) , (13) (26) (25)  
 (13) (11) , (13) , (13) , (13)

. 6 (17), 1 (18) , (11) (14),  
 (15; (14) , TFT(16), (15) (18) (19) (15)  
 (14) , TFT(16) (16c) (16d) TFT(16) (14) (15)  
 (16a), (16b), (15) (14) (23) (23)  
 (16a) (15) (24) (11) (23) (23)

14	4				TFT(16)		(16d)
	(20)	(17)	.	(19),	(21)	(18)	
(20)	(17)	.	(19)	TFT(16)	(16d)	,	
.	SiO <sub>2</sub>	.	(21)	(19)	(18)	.	(18)
1)		(19)	,	,	,	.	(2)
	(17)	,	(17)		(19)	(18)	
.	(18)	(21)		(18)		,	
(19)	(13)		(31)가	.	.	.	
	,	,			(22)	,	(1)
9)	.	(22)	,	(13)		.	(18)
	(20)	TFT(16)		(16d)	,	.	(19)
(19)	.	.	(18)	(21)	, TFT(16)	,	(18)
(19)		.	,	(18),	(19)	(21)	가
.	.	.	.	.	.	.	
	4		가	1	3	8	.
1)	(12)	(13)				, CLC1	(31)
	(12)	(19)	,	CLC2		(18)	, C1
(21)		(18)	가	(19)	.	(CLC2	(18)
,	TFT(16)		가	.	.	C1)가	(1)
9)	CLC1	가	.	.	.	(13) 가	
	.	.	,	(13)	(	/4	
	,	,	/2	) 가	가	가	
.	8	(13)	가	,	(13)	가	
,	(19)	가	가	,	(18)	(21)	(18)
C1	CLC2	.	(21)	가	,	(13)	
	.	.	가	SiN, SiO <sub>2</sub> ,	.	.	CL
	.	.	.	가	.	.	
	8						
	(13)						

15 A F 14 - . , (16a) (14) , (15) (16a)  
          , (16b), (16c) (16d) (15) ,  
 TFT(16) ( 15 A). TFT(16) ,

$$15 \quad B \quad , \quad (18) \quad , \quad (18) \quad , \quad (19) \quad , \quad (19) \quad , \quad (31)$$

(31) , (19) ( 15 F).

(18) AI . . . (11)  
, (13) (26) (25) . . . (12)  
(11) , . . . (13) (13)

$$(11) \quad \text{TFT}(16) \quad (17) \quad (26)$$

. .

$$1 \quad 4 \quad , \quad (26) \quad (17)$$

가 가

가

가

가

, 2

가

가

가

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

가

가

2

가

(57)

1.

가

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;

;

,

가

,

가

가

2.

1

,

가

가

3.

1 ,

4.

1 3 ,

5.

1 3 ,

6.

1 3 ,

7.

1 3 ,

8.

1 3 ,

, 2  
2 ,

9.

1        3 ,

, , , ,

10.

9 ,

, /

11.

4 ,

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

12.

5 ,

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

13.

6 ,

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

14.

7 ,

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

15.

8 ,

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

16.

9 ,

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

17.

10 ,

SiN, SiO<sub>2</sub>, Ti<sub>2</sub>O<sub>3</sub>, Ta<sub>2</sub>O<sub>5</sub>, SiO, Al<sub>2</sub>O<sub>5</sub>,

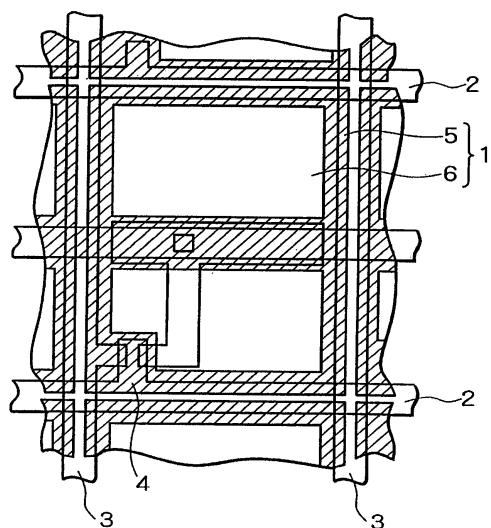
18.

1 ,

1 , 2  
2

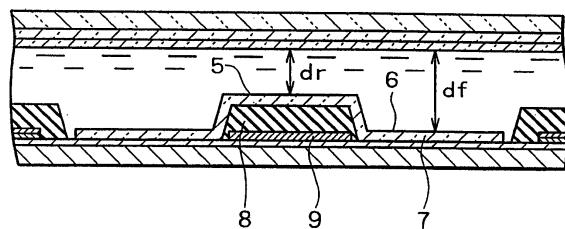
1

종래기술



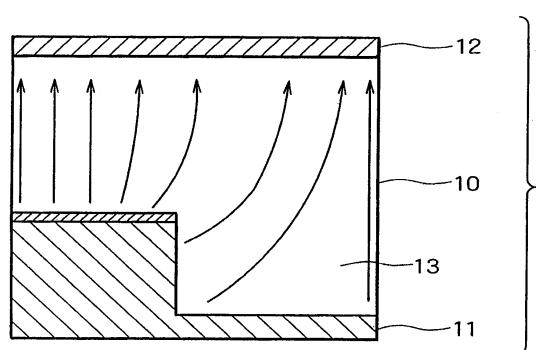
2

## 종래기술



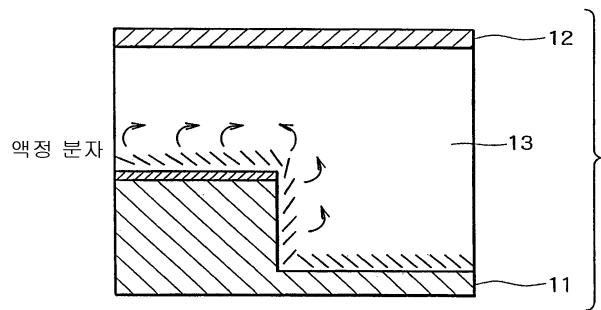
3

## 종래기술



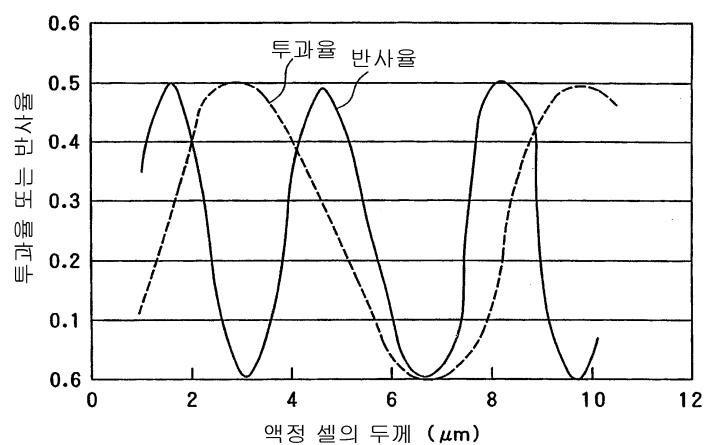
4

## 종래기술

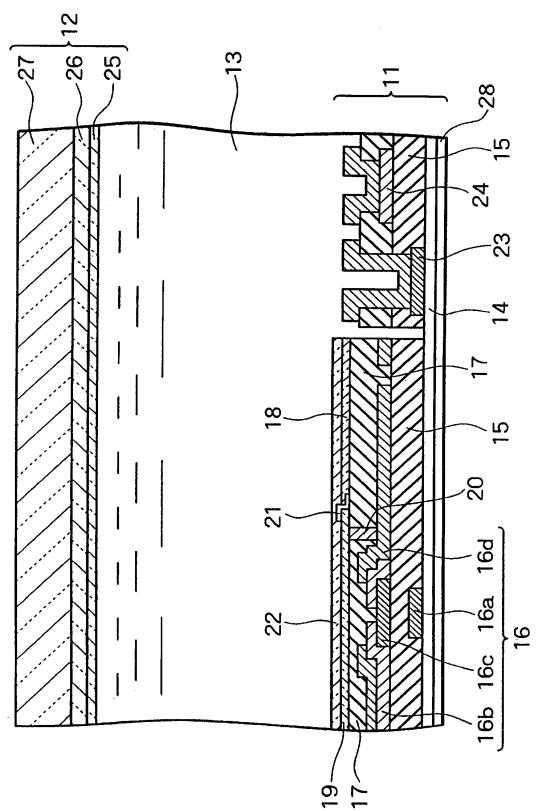


5

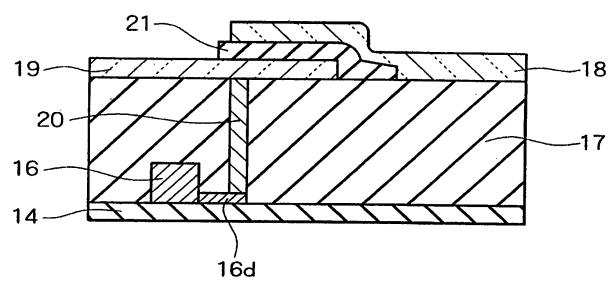
## 종래기술



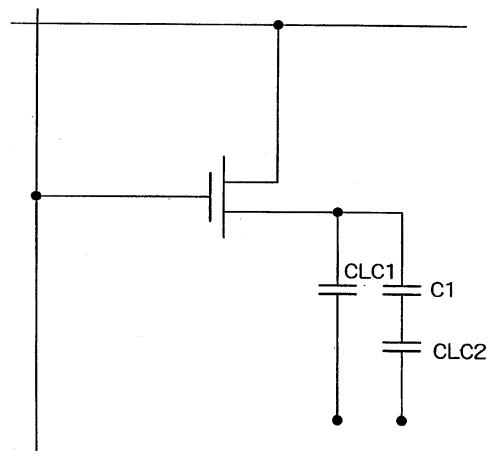
6



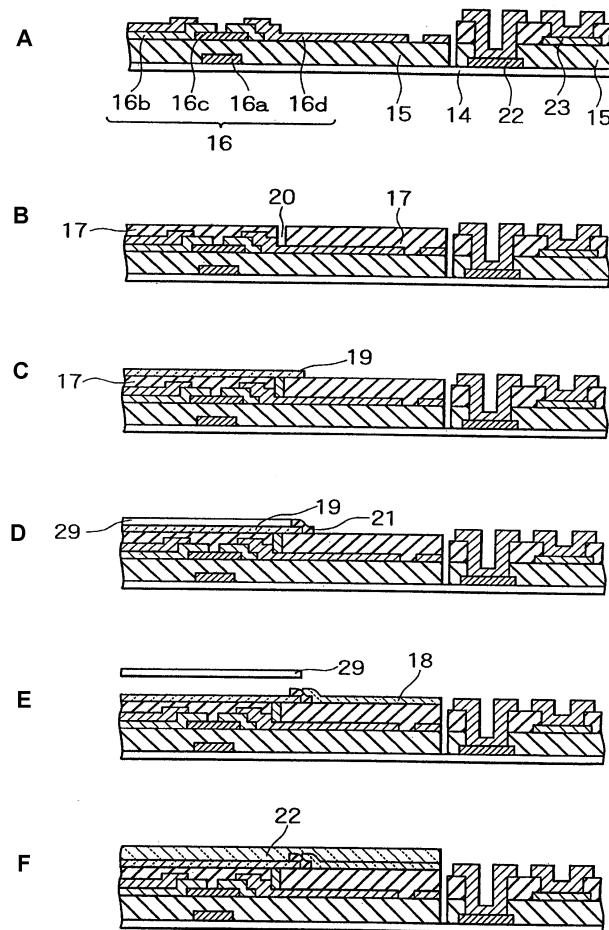
7



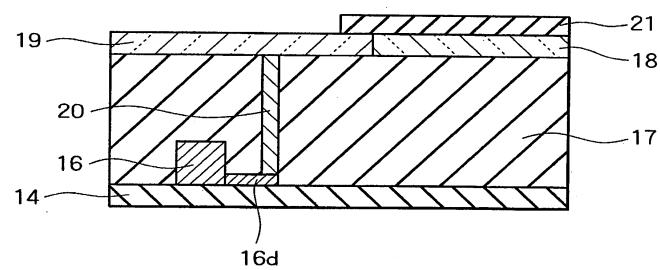
8



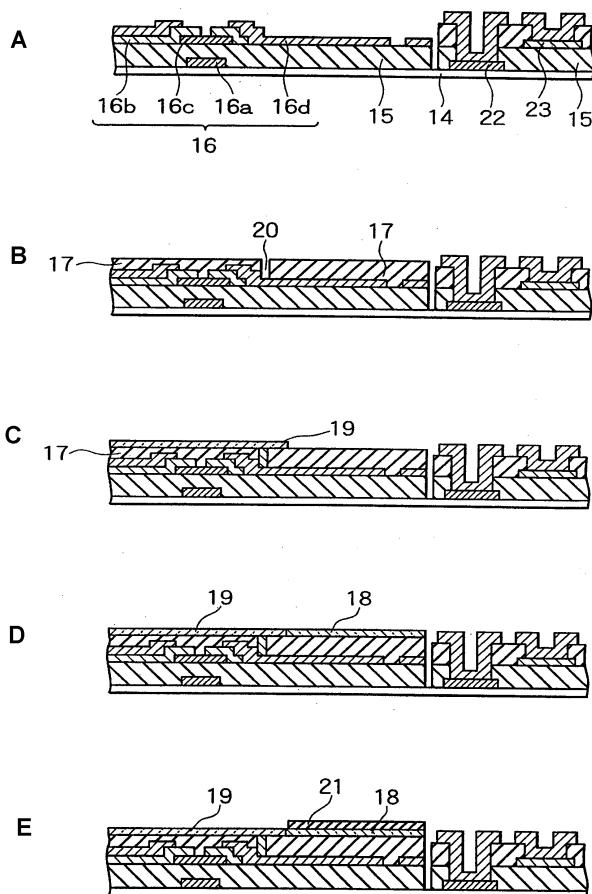
9



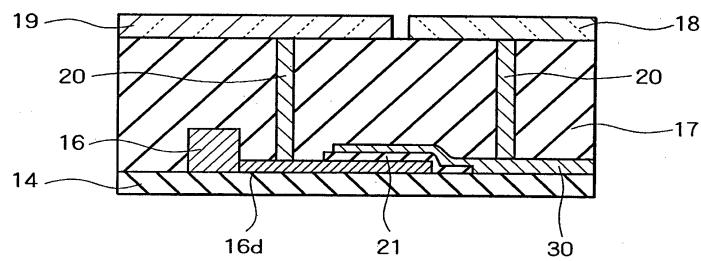
10



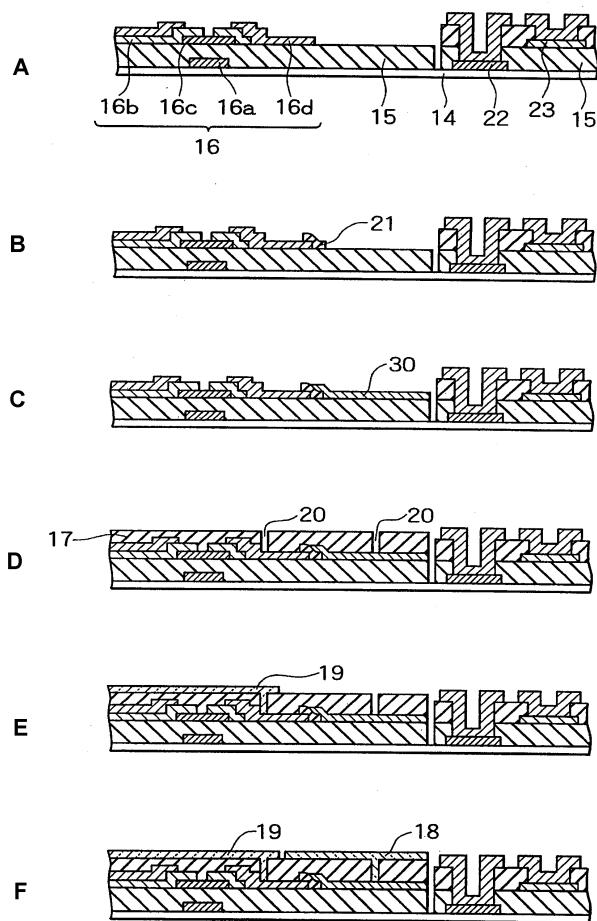
11



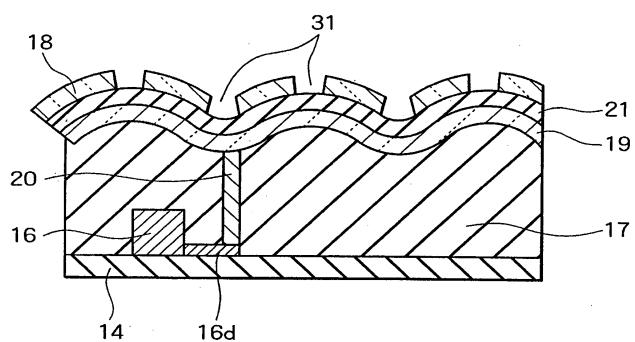
12



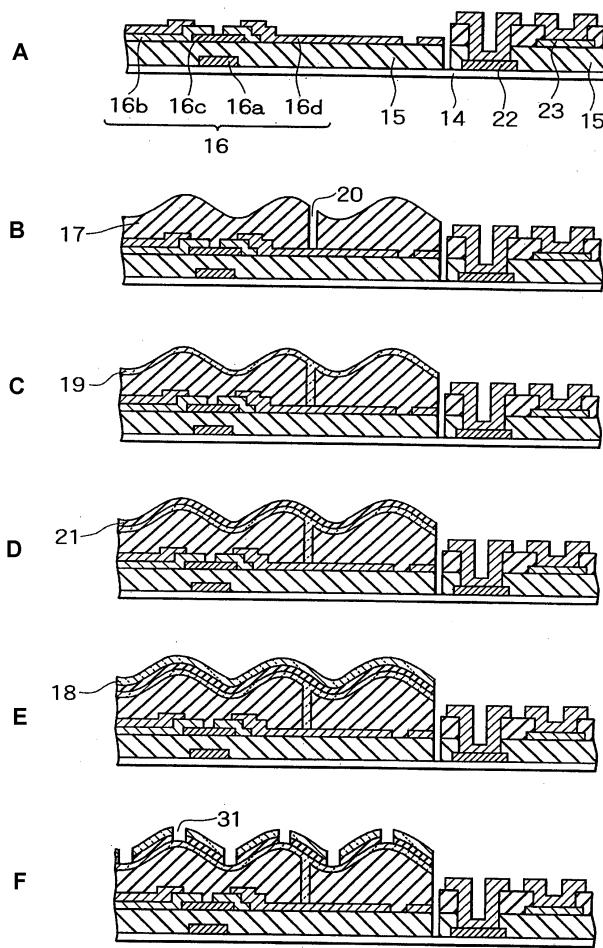
13



14



15



专利名称(译)	液晶显示器		
公开(公告)号	<a href="#">KR1020030017372A</a>	公开(公告)日	2003-03-03
申请号	KR1020020049409	申请日	2002-08-21
[标]申请(专利权)人(译)	NEC液晶技术株式会社		
申请(专利权)人(译)	日元号技术可否让这个夏		
当前申请(专利权)人(译)	日元号技术可否让这个夏		
[标]发明人	IKENO HIDENORI 이케노 히데노리 SUZUKI MASAYOSHI 스즈키 마사요시		
发明人	이케노 히데노리 스즈키 마사요시		
IPC分类号	G02F1/133 G02F1/1335 G02F1/1343		
CPC分类号	G02F1/136227 G02F1/133555		
优先权	2001251088 2001-08-22 JP		
其他公开文献	KR100491372B1		
外部链接	<a href="#">Espacenet</a>		

### 摘要(译)

在液晶显示器中，液晶层插入下板中，在下板中形成布线和薄膜晶体管，并且相对基板间隙面向下板并且布置。制备其中形成反射电极的反射区域和形成透明电极的透明区域。公共电极形成在相对的板上。在反射电极(18)与透明电极和公共电极之间施加电压。因此，驱动液晶层。施加在液晶层中接触的相对板表面上的驱动电压与施加在液晶层中接触的下板表面上的驱动电压之间的电位差随着静电容量的电容分配而降低透明区域和反射区域的透明区域和反射区域的亮度最大化。由于上述原因，透明模式和反射模式下的亮度最大化。并且，在反射区域和透明区域之间的边界周边中，液晶分子的取向不受干扰。液晶显示器，反射电极，透明电极，取向层。

