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G02F 1/1335(11)  
(43)2002 - 0066982  
2002 08 21(21) 10 - 2002 - 0007184  
(22) 2002 02 07

(30) JP - P - 2001 - 00036799 2001 02 14 (JP)

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

(74)

:

(54)

, 가 ,  
 , 1 (60) (56)  
 (51) (59) (58) (59) (55) (56)  
 (51) (59) 1 (61)  
 (59) 1 (61)

1

, , ,

1

2a 2b 1

3

4

5 1 , a g

6 5 , 1  
, h i

7 1

8 1

9 1

10 1

11 , a f

12

13 12

14a 14b 가

15

16 , a f

17 16 , h i

< >

48, 55 : 49 : ( )

50 : 51 :

52 : 53 :

54 : 56 :

57 : 58 :

59 : 60, 61 :

71 : 72 : ( )

73 : TFT( )74 :

75 : 76 :

77 : 78 :

79 :

, .

(PDA; personal digital assistant),  
가  
가

(TFT; thin film transistor) MIM(  
; metal - insulator - metal)  
가 가

가  
가

가

50%

가

가

(鏡面)

(moire fringe)가

15

(2), (3), (1) (4), (7; TFT ) (14) (1)  
 8), (8) (5), (6; ) (7) (  
 (10), 2 (9), 가 1  
 (11), (9) (12) ( )  
 (13) (1) (7) (14)  
 (Al)

(16) (16) (15) (2), (3), (4),  
 (5), (6), (14) (13)

(15) 가 (11)  
 (13) (13)  
 가 (10) (20)

16 17

(20) (21) ( 16[a]).  
 (22), (23), (24) ( 16[b]). (23) (24)  
 (25) ( 16[c]), (26), (27)  
 ( 16[d]).

(28) ( 16[e]).  
 가 (29)  
 ( 16[f]), 가 (29) (30) ( 17[g]).  
 (31) (32) ( 17[h]).  
 (33) ( 17[i]), (34)  
 ( 17[j]). 61 - 6390

가

(28)) , 가 ( 가  
 , 가  
 , ( ) , (flicker)가  
 , ( ) , (28) (11)  
 ,  
 .

(29) , 16[f] ,  
 0.5 5 $\mu$ m (29) , 16[f] (29) , 1 20 $\mu$ m ,  
 (29) , (29) 가 , 가 ) ,  
 .

, ,  
 , 가 , ( )  
 , .

(55) ); 2 , 1 ( 1 (48) ); 2 ( 1  
 ; 2 ;  
 ; 1 2 ,  
 ,  
 ; 2 ,  
 .

, (全面)  
 , 가  
 , ,  
 ( , , 가  
 , .



;

.

가

,

,

가

가

1

( 2 A - A 1 )

가 2

(51) (50) ,

(52; ) (53) , (51, 52) (50) ,

(50, 53) (54) , 15

가 (51) 가 , 15

(網狀)

(51) , (79; 2 )

(TFT; 1 ) (51) ,

(51)

가

(50) , (55) , (55) (58) , TFT

(58) (56) , (56) (59) , (59)

(57) (56) , ,

(57) , , (50)

(51) , (57)

1 (60) 1 (60) 2 (61) .

(51) , 2 (61) . 2 (61) , 1 (60) 1 (60)

(57) , 1 (60)

(79; 2) 1 (60) 2 (61)

1 (60) , ( ) , . 2 (61) , 2 (61) .

(53) , (48) , (48) (62)가 , (52) (62) (rubbing) )가 (53) (51) (52) , ( 62) , (49; ) .

(58) (59) . (58) , , ( ) , (59) , (58) (59) , (59) , 1 (60; ) ( 가 .

2 , (50) , 1 2 (分圖) . 2a 2b , a 2a 2b (51) , 2b 2a (51) .

2 (71; ) (72; ) , 1 (71) (72) 2 (72) TFT(73)가 , TFT(73) (75) (72) , TFT(73) (74) (71) . TFT(73) (76) (59) , (59) . (58) , (71) .

(51) , (79) (76) , (71) (72) , (53) , (71) (72) (49; ) , (51) , (49) , ( 51) .

(51) , 1 가 , (77) . 1 (77)가 , (77) ,

, (77)가  
, (59) (58) ,  
, 1, 2 , TFT(7  
3) (59) (58) , TFT(73)  
, TFT(73)  
가 , (59) 가 ,  
(58)

(58) (59)  
, (57) 가 , 1 (60) , 가  
(57) 가 (57) 가  
,

3 , (50)  
, 1 ( ) 3 , 2 ,  
(77)가 (77) , (78) (77)  
가 (78) (77) (78)  
( )

, (77) 1 (60) ( (57))  
,

4 , (50)  
B - B , (57) , TFT(73) (76) 2  
, 2 (61) (79) , (51; ) ,  
(51) TFT(73) (76) (59) .  
, 2 4 , TFT(73) (51) 가 , TFT(  
73) ( (77)) 가 .  
, (79) (76) ( (76) ) , ( (79)  
76) (59) (79) 가 , (59)  
(79)

, 5 6 , 5  
6 , (57) , (53)  
, (50)

, (55) (Cr) 50nm ( [a]), ,  
, (74) (58) ( 5 [b])). [b]가  
(1PR) , n nPR .

, (56) CVD 400nm, TFT  
 (80) CVD 200nm (80),  
 ([c]). (80) TFT(73) (81) [d]: 2PR).  
 (81) ITO( ) 50nm ([e]).  
 ITO, (75), (76) (59) ([f]  
 : 3PR).

, 1 (60; 3 $\mu$ m) ([g])., ,  
 1 (60) ([h]: 4PR). 1 (60),  
 가 , 가  
 가 , 1 (60),  
 (59) 1 (60)  
 , 1 (60) (59),  
 1 (60) (59),  
 가 ,

1 (60),  
 ([i])., , , 2',  
 60 1 10 40° 60 80°  
 , , , , ,

, 2 (61) 1 $\mu$ m ([j])., 1 (60)  
 2 (61), 2 (61)  
 (79) ([k]; 6PR). (79), 2 (61)

, 300nm, ,  
 (51) ([l]; 6PR). (79), (51)  
 (76), (59), 60 가  
 (酢酸) (硝酸) 가

, (50) (51)  
 1 $\mu$ m, ,  
 , 0.4 5 $\mu$ m,

, (50) (53), (50) (53),  
 가 , (spacer),  
 (54), 가

n  
 가 (silane) 가 , 가 CVD , 가 ,  
 133Pa, 200W , 가 ( / ) 0.1 0.5 , 200 300 ,  
 ( / ) 0.1 0.8, 250 , 133Pa, 200W , 가 , 가  
 가 , 가 ( / ) 0.25 2, 200 250 , 133Pa,  
 50W . n , 가 (phosphine) , 가  
 ( / ) 1 2, 200 250 , 133Pa, 50W .  
 ,  
 39.9Pa, 100 300W , 가 가 , 0.665  
 0.665 39.9Pa, 50 200W , 가 Cr , 가 ,  
 2  
 , Cr, Cr  
 , Ti, W, Mo, Ta, Cu, Al, Ag, ITO, ZnO, SnO ,  
 ,  
 ,  
 7 , 1 , (59)  
 , (59) (58)  
 , 1 (60) , (59)  
 (58)  
 8 , 1 , (59)  
 (58) (58) , (59)  
 (58) , (59)  
 9 , 1 , (59)  
 , (58)  
 (59) (58)  
 (59) / (58)  
 , (59) (5)  
 8) , 1 (60) 가  
 ,  
 10 , 6 [i]( ) 가  
 , 7 9 (59) (58) (51) 10  
 가  
 , 1 (60) 2 (61) ( )

가 , , (halftone photoresist)

11 ,

(59) ( 5 [f]) 가 , "

63"

11 [a] , (63) , (64) 1 5 $\mu$ m

11 [b] , (64) (65)

2 (66) , 11 [c] ,

11 [d] , ,

( 64; ) ( 64) 40% , 11 [e] ,

200 60 가 , 가 , 200nm

11 [f] , (51)

(51) ,

가 , 가 ,

1 , 7 9 (

가 )

1 4

12 , (50)

13 , 13 , 12 C - C

12 13 , 1 4 가 , 1 4

12 , 가 (51) , (51)

2a ,

12 13 , 1 4 ,

(91) (90) (91) , (71)

(91) , (90) , (91)

(59) , (90) ,

(59)

1 (60) , (59)

14, 14b, 12, 13, 14a, 1, 4, 1, 가, 가, .

2

, 2

가 .

(57)

1.

[illegible]

2.

3.

1 2 , , , , .

4.

1 3 , 2  
가 .

5.

1 4 , , 1 2  
1 ; .

6.

1 4 , , .

7.

1 4 , .

8.

가 ,

;

;

,

,

,

.

9.

8 , .

10.

8 9 , 가 .

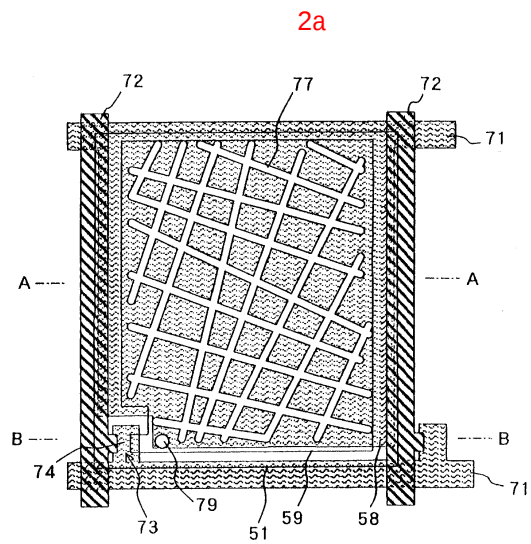
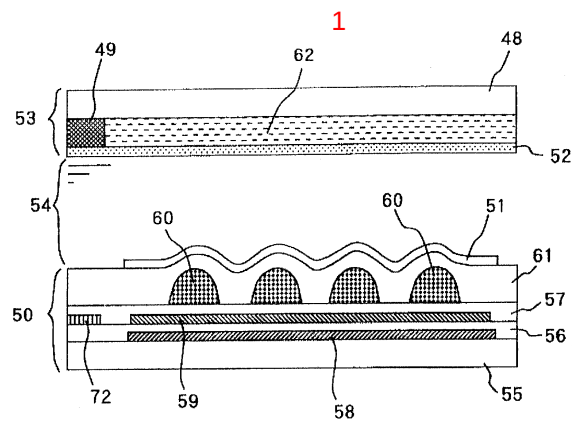
11.

8 10 , 1 ; 1 2

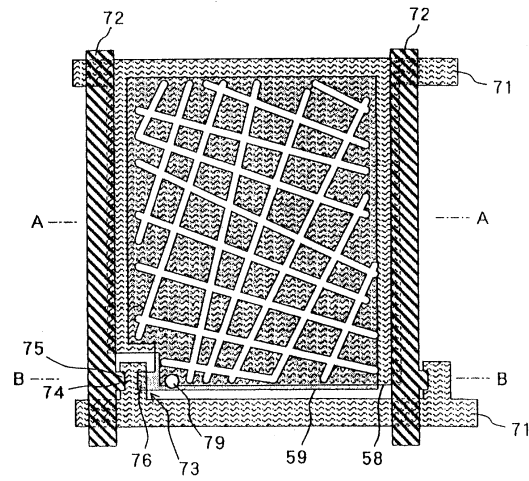
1 2

12.

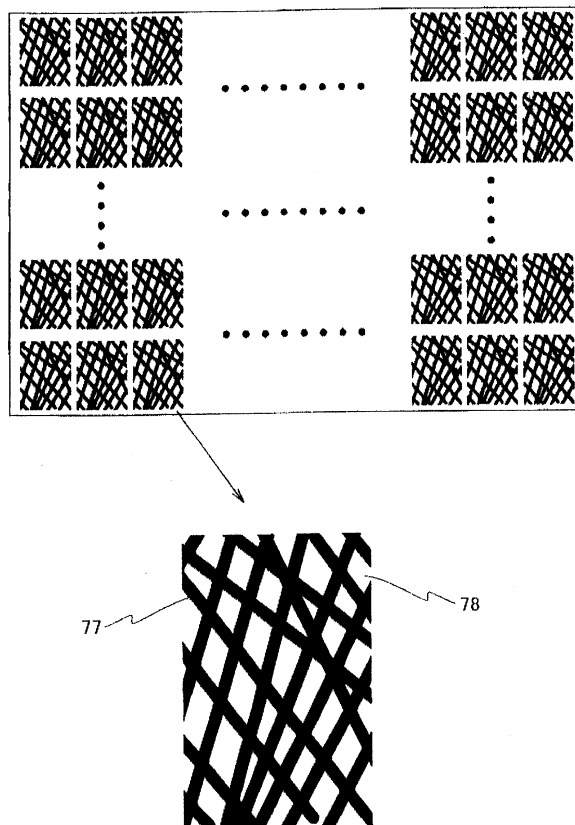
8 11 , ;



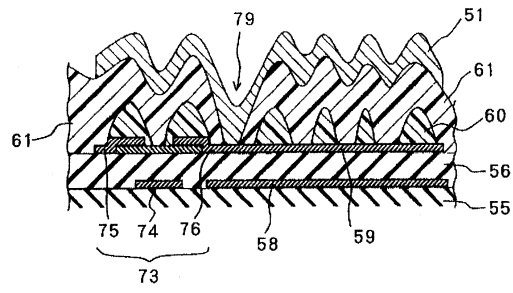
2b



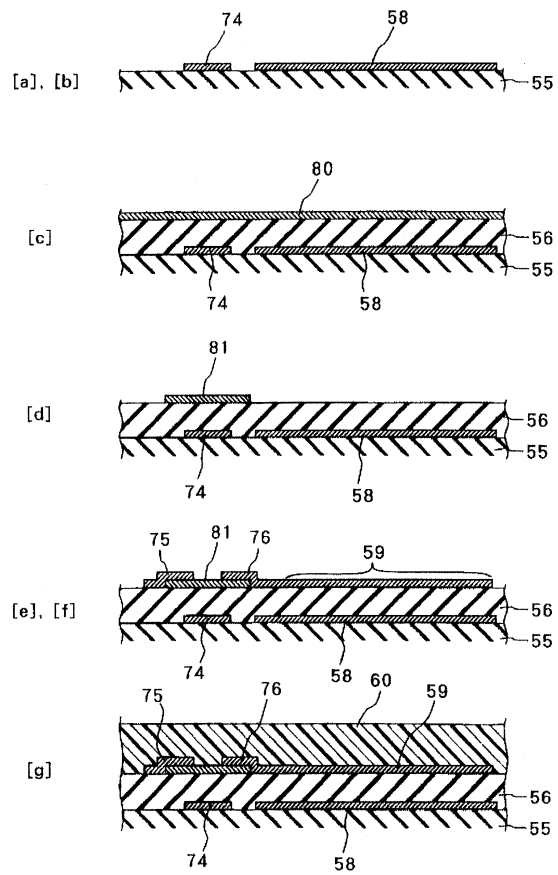
3



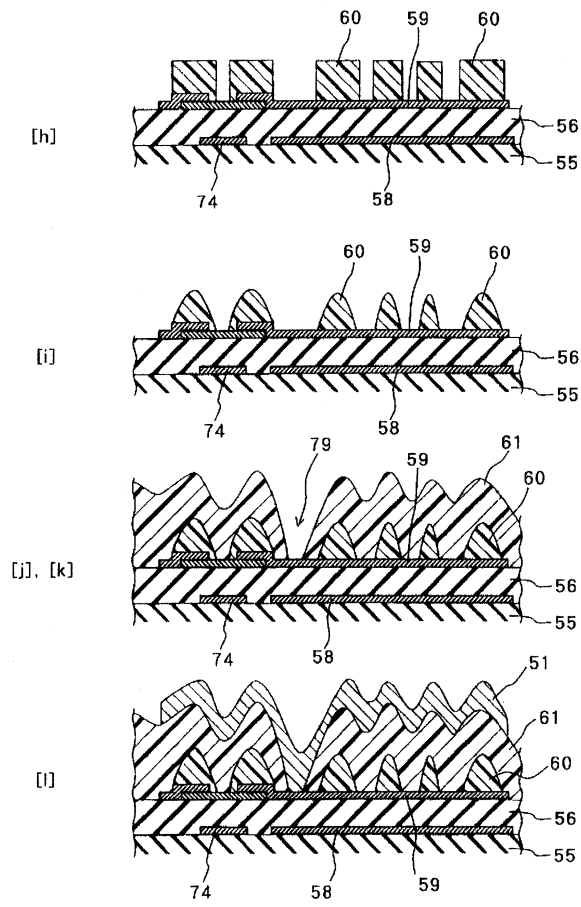
4



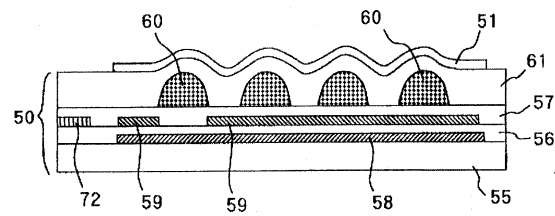
5



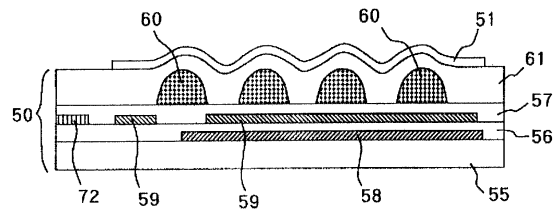
6



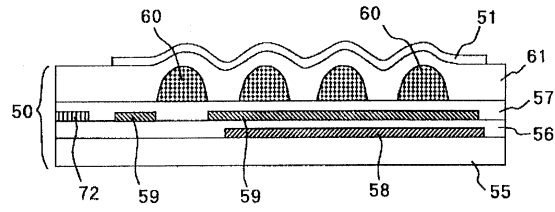
7



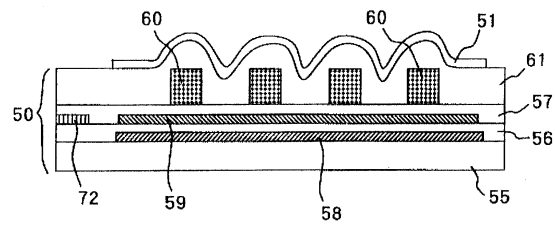
8



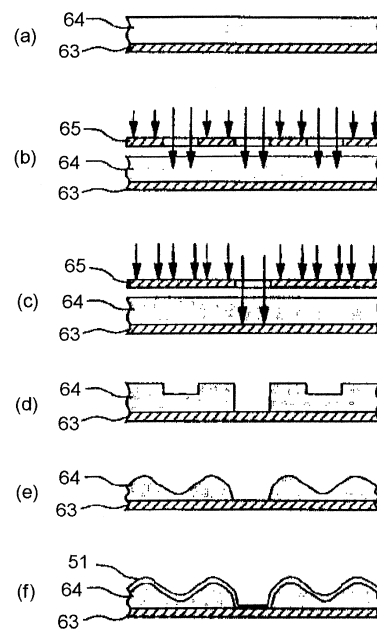
9



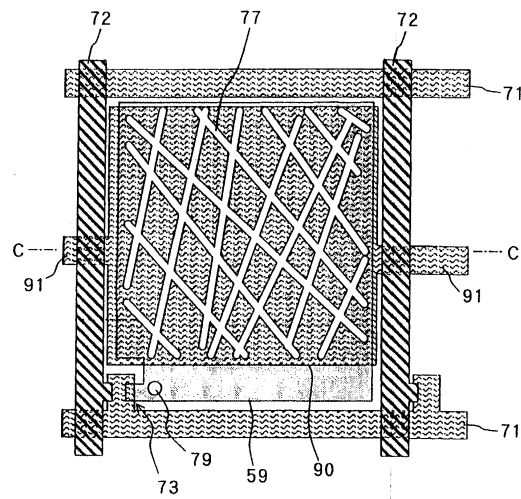
10



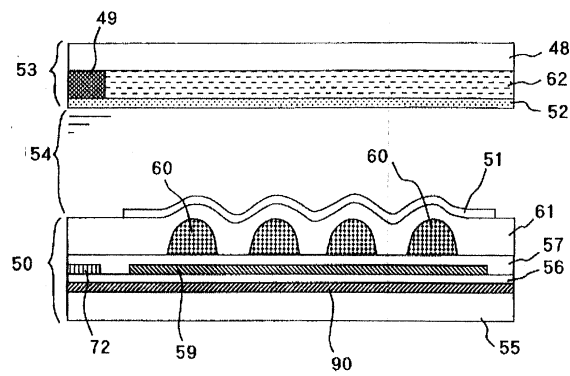
11



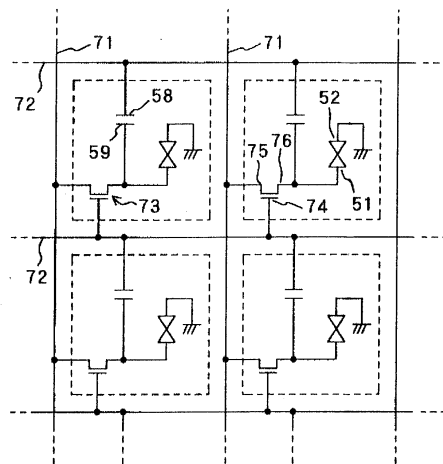
12



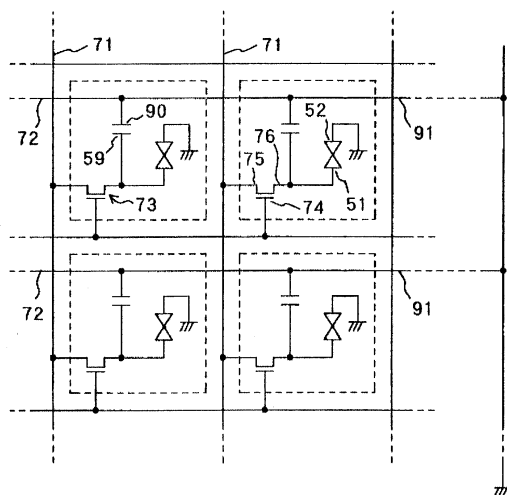
13



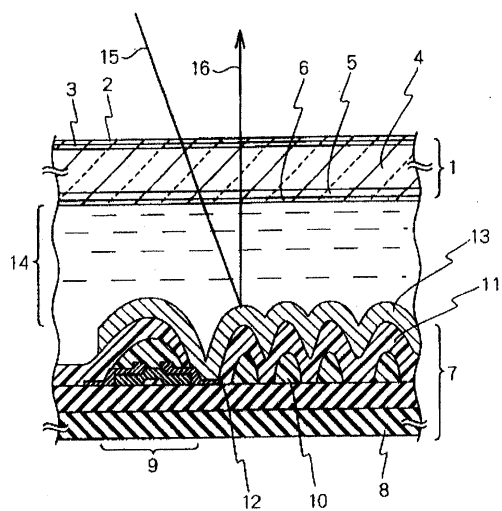
14a



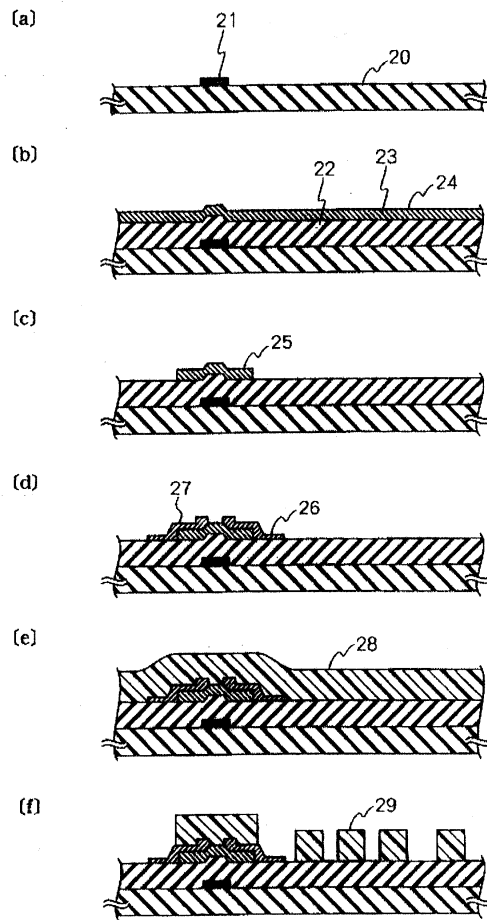
14b



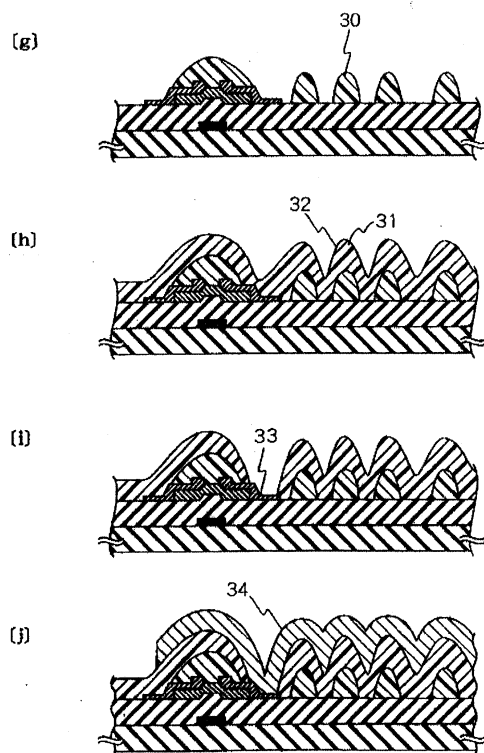
15



16



17



|                |                                                                                                                                                         |         |            |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------|
| 专利名称(译)        | 有源矩阵液晶显示装置及其制造方法                                                                                                                                        |         |            |
| 公开(公告)号        | <a href="#">KR1020020066982A</a>                                                                                                                        | 公开(公告)日 | 2002-08-21 |
| 申请号            | KR1020020007184                                                                                                                                         | 申请日     | 2002-02-07 |
| [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<br>日本电气有限公司sikki                                                                                                                            |         |            |
| 当前申请(专利权)人(译)  | 日元号技术可否让这个夏<br>日本电气有限公司sikki                                                                                                                            |         |            |
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| 发明人            | 사카모토미치아키<br>야마구치유이치<br>이케노히데노리<br>마쓰노후미히코<br>기카와히로노리                                                                                                    |         |            |
| IPC分类号         | G02F1/1368 G02F1/1362 G09F9/30 H01L21/336 G02F1/1335 G09F9/00 H01L29/786                                                                                |         |            |
| CPC分类号         | G02F1/136213 G02F1/133553                                                                                                                               |         |            |
| 代理人(译)         | JO , EUI JE                                                                                                                                             |         |            |
| 优先权            | 2001036799 2001-02-14 JP                                                                                                                                |         |            |
| 其他公开文献         | KR100455557B1                                                                                                                                           |         |            |
| 外部链接           | <a href="#">Espacenet</a>                                                                                                                               |         |            |

#### 摘要(译)

在反射型有源矩阵液晶显示器中，真实地构建了反射膜。用于形成反射膜的曝光剂量稍微完成，并且可以缩短制造时间。而且制造过程很简单。在像素中确保足够的存储容量。在每个像素的凹凸结构形成区域中，它布置在第一绝缘层（60）和底部绝缘层（56）之间。形成上电极（59）的底部电极（58）和堆积体积设置在源电极，上电极（59）之间，同时与电极电连接到反射膜（51）在线盒中准备薄膜晶体管的玻璃基板（55）和底部绝缘层（56）。基于图案化的第一绝缘层（61）的形状确定反射膜（51）的表面的凹凸形状。上电极（59）通过光刻法用作第一绝缘层（61）的图案中的反射镜。液晶显示器，反射膜，累积体积，绝缘层。

