

(19) (KR)  
(12) (B1)

(51) 。 Int. Cl.<sup>7</sup>  
G02F 1/1333

(45)  
(11)  
(24)

2004 07 30  
10-0442490  
2004 07 21

(21) 10-2001-0083284  
(22) 2001 12 22

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10-2003-0053215  
2003 06 28

(73) .  
20

(72) 1005 1403

2 408 301

152 1 106

1736-2

(74)

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(54)

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가

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6h

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2 1 ,

3a 3h 5 1 , 2

4a 4j 4 1 , 2

5a 5h 5a 5h , 가

6a 6h ,

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400: 402:

404: 408:

410: 412:

414: 416:

420: 422:

423: 424:

425: 426:

430: 432:

434: 436:

438: 440:

441: 450:

461 464: 1 4

(liquid crystal display : LCD)

(matrix)

(integrated circuit : IC)가  
(color filter)

가 가

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가

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가

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가

가

가 가

4

6

, , R,G,B 가  
(rubbing)  
(seal pattern) (sp  
acer)  
(scribe)  
(break)  
가 가  
가 가  
1  
1 (100) (113) (115) (1  
13) (114) (115) (102)  
(101) 가 (114) (115)  
(113) (113) (113)  
가 가 가 가 (101)  
(113) (102)  
(101) (101) (102)  
- (cell-gap) (102) (113) 가 (116) (101)  
2 1 (113) (101)  
2 (4) (2) (2)  
(2) (4) (4) (2) (TFT) (14)  
(2) (4) (8) (10) (TFT) (10) (overlap)  
(12) (10) (8) (14) (12) (12)  
(12) (TFT) (16) (4) (10) (8)  
(12) (TFT)가 (4) (8) (8)  
12) (16) (12) (14) ITO(indium tin ox  
12) (14) (12) (14)  
ide) ( 가 가 )  
(14) (22) (14) (20) (4) (4)  
(18) (20) (4) (TFT)  
(18) (4) 가 가 - (turn-o  
n) (14) (turn-off)

3a 3h 1 , 2 ,

5 가

3a 가 (200) (Mo, Al , Cr ) (sputtering) , 1 (200) (204) (204) ,

(210) 2 (204) (210) (200) SiNx

3b (230) (230) (amorphous silicon)

3c (P) (232) (Ohmic contact layer, 234) 2

3d (210) (236) (230)

3 (212) (236) (230) (208)

(220) (208) (212) (236) (230) (204) (202)

3e (234) (blanket) (208) (212)

3f (220) (202) (132) (230) (208), (212),

sition : CVD) SiNx (chemical vapor depo

(38) (passivation layer, 238)

glass) Acryl BCB(benzocyclobutene), SOG(spin on

3g (238) (238) (230) 4

(204) (212), (202) (220), (216),

(222), (223) (238) (224)

3h (238) 5 (216)

(212) (222) (223) (224)

(204) (214) (225) (226)

(202)

5 (210), (2

36), 5 / (208,212) 1 3 (photosensitive film)

(photolithography) 가가

4

4 가 1

4

4a 4j

4a 가 (300) (300) 1 (304)

(300) (310) (304) (310) (300) (336)

4b (330), (336), (340) (334)

(332)

, 4c (340) (341) 2  
 (310) (341)  
 2 (341) (341) (341)  
 , 4d (330) (341) (330)  
 (340) (336) (320) (330)  
 (304) (302) (330)  
 , 4e 2 (341) (341) (341)  
 가 (341) (340) (334)  
 , 4f (341) (340) (332)  
 , 4g (334) (308) (312) (332)  
 , 4h (332) (308), (312),  
 (320) (302) (330) SiNx  
 (338)  
 , 4i (338) (338) (330) 3  
 (312), (320),  
 (304) (302) (316),  
 (322), (323) (324)  
 , 4j (338) 4  
 (312) (316)  
 (320) (322)  
 (304) (323)  
 (302) (324)  
 4  
 (308,312) 2 (336) /  
 , (320) (330) (336)  
 (304) (302) (330) (336)  
 (304) (330) (336)  
 (323) (325)  
 4 4 5  
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 5a 5h  
 , 5a (400) , 1 (461)  
 (410)  
 , 5b (410) (400) (430),  
 (436), (440) (450) (436)  
 (432) (434)  
 (440)  
 2  
 1 (Cr)  
 , (450) (loading effect) (436)  
 (Mo)  
 , 5c (450) (441)  
 2 (462) (450)  
 (441)  
 , 5d (441) (450) (440)  
 (441) (440)  
 (450) (434)  
 , 5e (450) (440) (434)  
 (432) (440) (450)  
 (434) (Mo) (450)  
 (434) (432)  
 (450) (434)  
 5 30% : 40 90% : 5 30%  
 가 가 10 100[SCCM] : 50 500[SCCM] : 10 100[SCCM]  
 SF<sub>6</sub> : Cl<sub>2</sub> : H<sub>2</sub> or O<sub>2</sub> 가 30[SCCM] : 300[SCCM] : 30[SCCM]  
 , SF<sub>6</sub> : Cl<sub>2</sub> : H<sub>2</sub> or O<sub>2</sub> 가  
 , 5f (450)  
 (440) (434) (432)  
 (440) (408) (412)  
 (450) (434) 가  
 (450) (440)  
 (434)  
 , 5g (432) (408) (412)  
 (430) (438) (463)  
 (412) (416) (438) SiNx  
 (step coverage)  
 BCB, SOG Acryl  
 , 5h (438) 4 (464)  
 (416) (412) (438)  
 (414)  
 (Mo) (450) (P)  
 (434) (400) (436)  
 (436) 가 4  
 , 5a 5h , 4  
 , 6a 6h 가  
 , 6a 가  
 가 (400) , 1 (461)  
 (400) (404)

(400) 6b (430), (440) (410) (404) (450) (410) (400) (436)

(432) (440) (436) (434)

(440)

1 1 2

(450) (loading effect) (Cr) (436)

(Mo)

2 6c (462) (441) (450) (441)

6d (440) (450) (430) (441) (441)

(430) (436) (404) (420)

(440) (450) (436) (402)

6e (432) (450) (434) (440) (440) (434)

(434) (Mo) (450)

(434) (432)

(450) (434)  $\text{SF}_6 : \text{Cl}_2 : \text{H}_2 \text{ or } \text{O}_2$  가

5 30% : 40 90% : 5 30%  $\text{SF}_6 : \text{Cl}_2 : \text{H}_2 \text{ or } \text{O}_2$  가 10 100[SCCM] : 50 500[SCCM] : 10 100[SCCM]

30[SCCM] : 300[SCCM] : 30[SCCM]

(440) (450) (450) (450) (450) (440)

(434) (432) (450) (450) (450) (440)

(450)

(434)

(440) (450) (450) (450)

(450) (434)

6f (450) (434) (432) (412)

(440) (440) (408)

(450) (434) 가 (440)

(434)

6g (420) (402) (432) (330) (408), (412), (438)

(438) (438) (430) 3 (463) (420), (416), (404)

(412), (402) (424) (438) SiNx (422),

(423) (step coverage) BCB, S

OG Acryl 6h (438) (438) 4 (464) (416) (422) (423)

(412) (420) (404) (414) (425) (426)

424) (402)

(434)  
(434)

(400)

(436)

(436)

가

4

가

4

가

(57)

1.

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3

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2.

가

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2

3

4

3.

1 2

1 2

4.

1 2

(Cr)

5.

1 2 , (loading effect)

6.

1 2 , (Mo)

7.

1 2 , (P)

8.

1 2 ,  
 $SF_6 : Cl_2 : H_2 \text{ or } O_2$  가 5 30% : 40 90% : 5 30%

9.

1 2 ,  
 $SF_6 : Cl_2 : H_2 \text{ or } O_2$  가 10 100[SCCM] : 50 500[SCC

M] : 10 100[SCCM]

10.

1 2 ,  
 $SF_6 : Cl_2 : H_2 \text{ or } O_2$  가 30[SCCM] : 300[SCCM] : 30[SC

CM]

11.

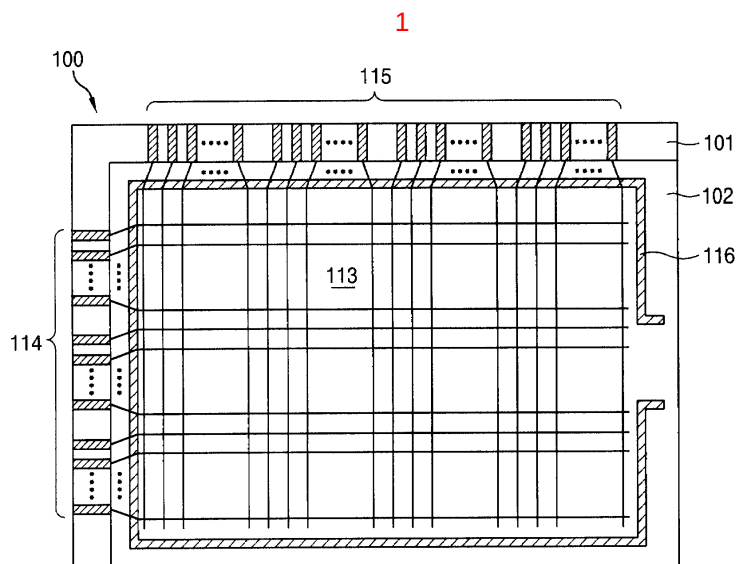
1 2 ,

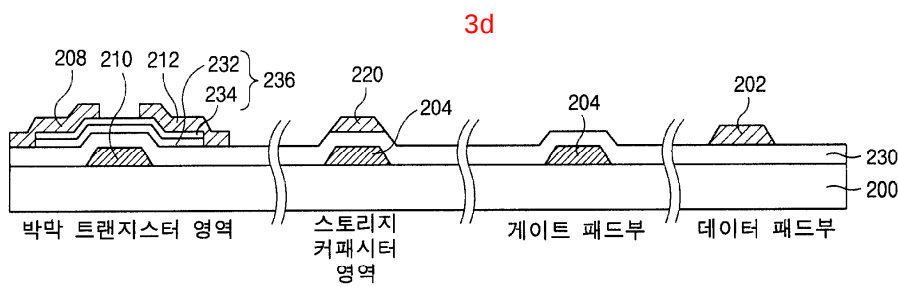
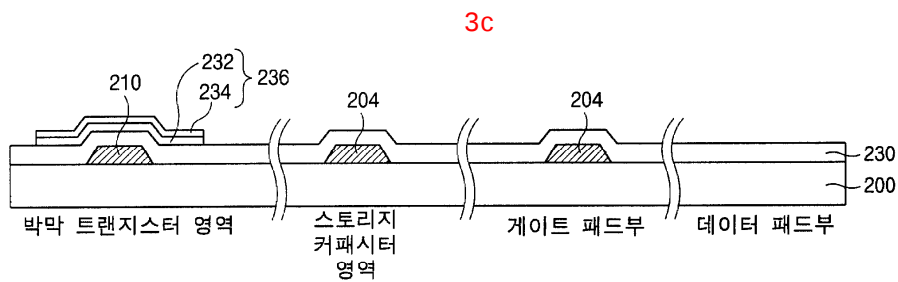
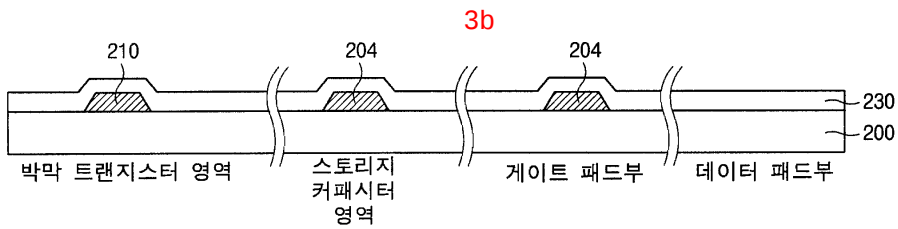
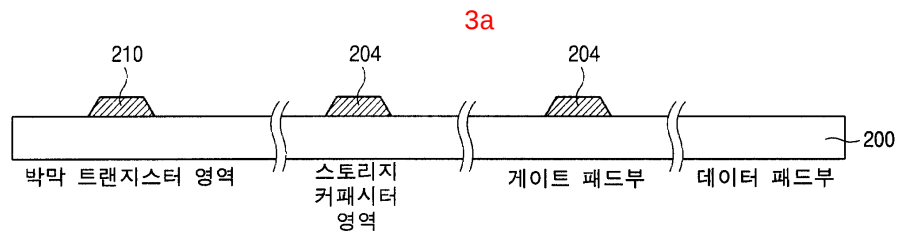
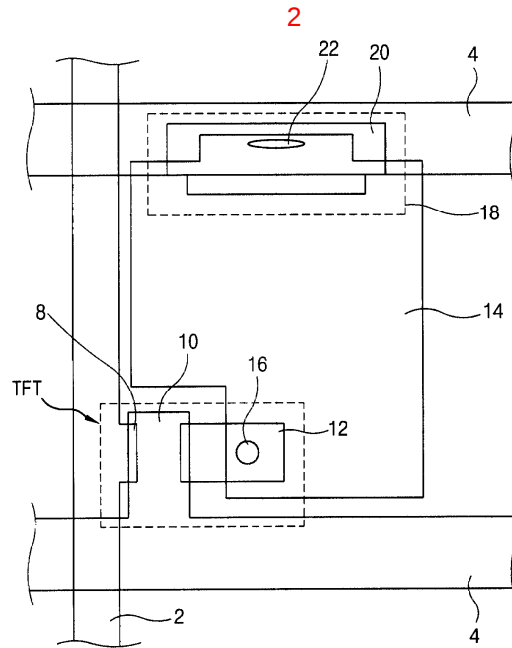
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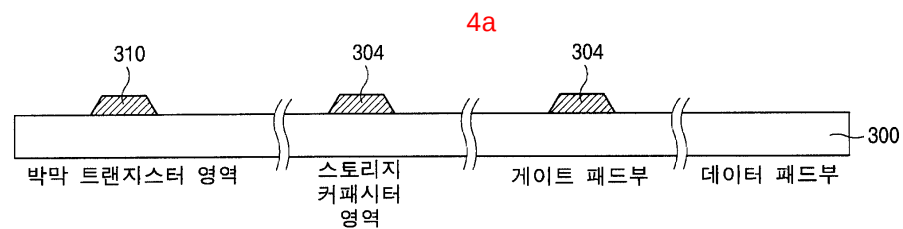
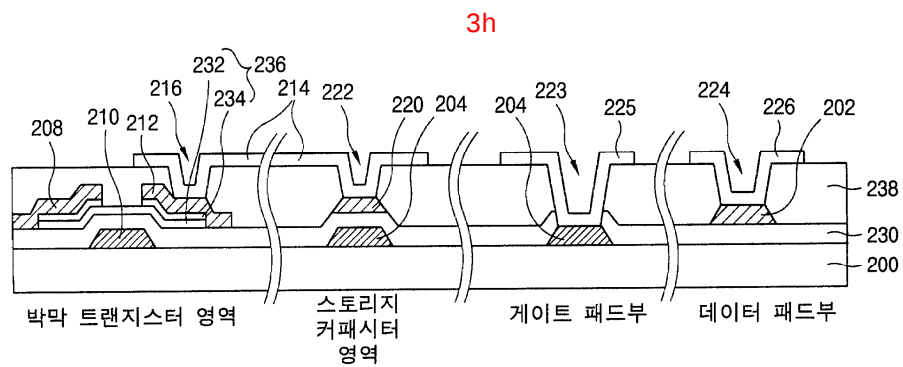
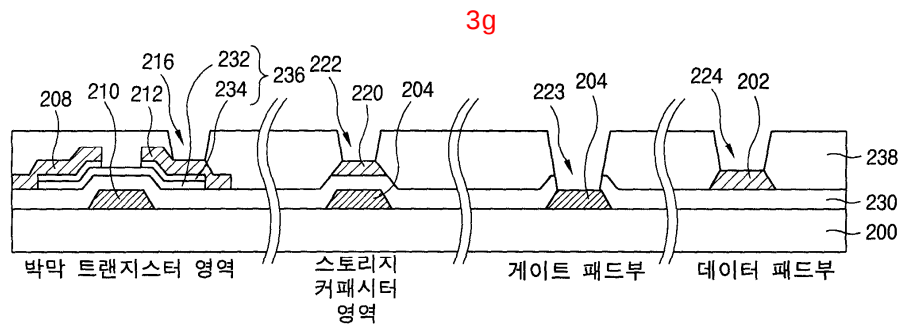
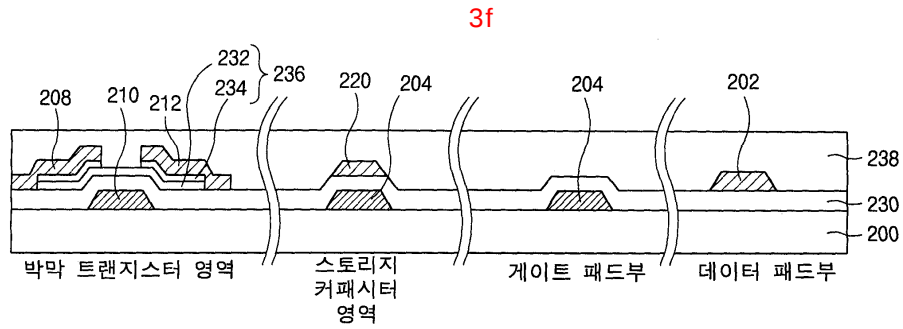
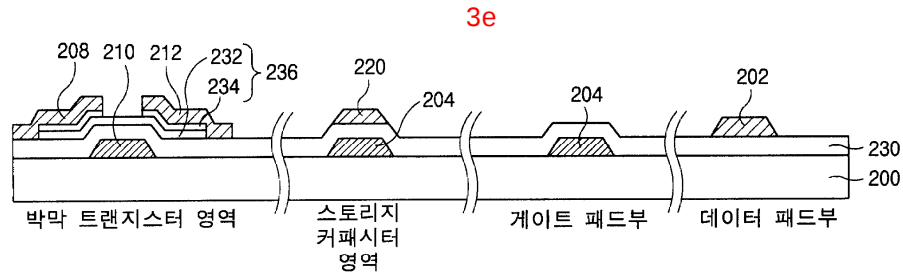
1 2 ,

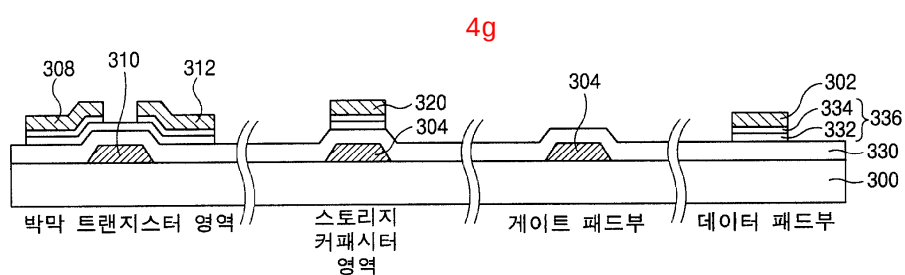
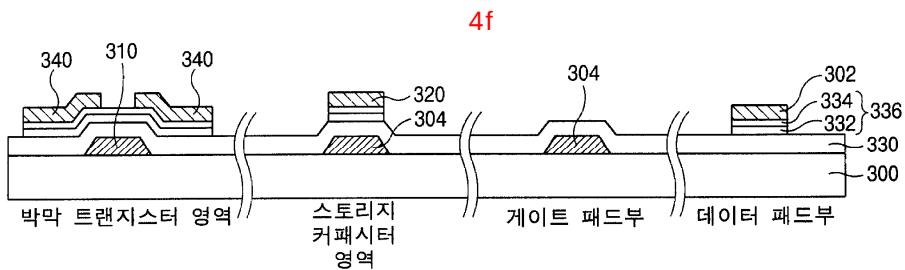
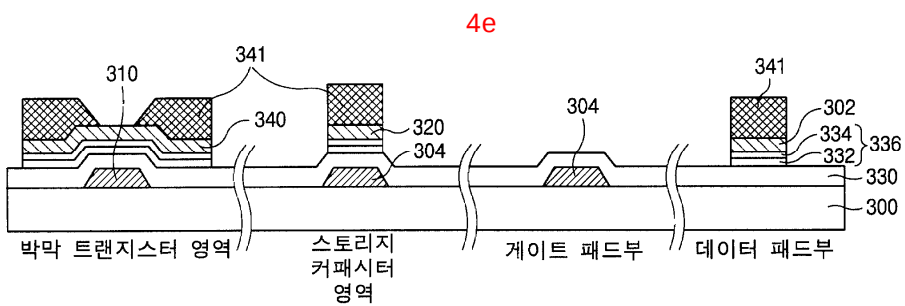
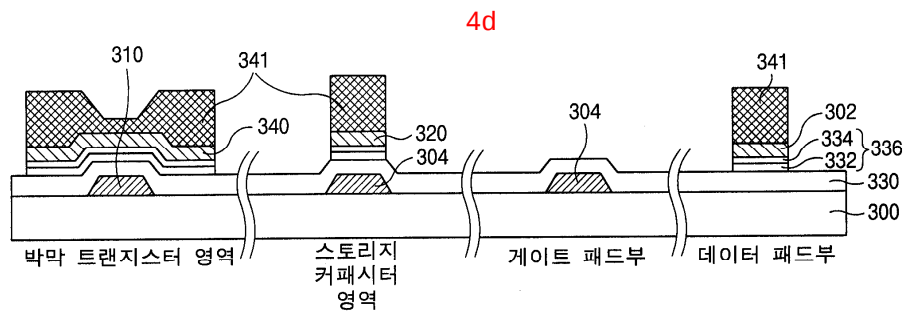
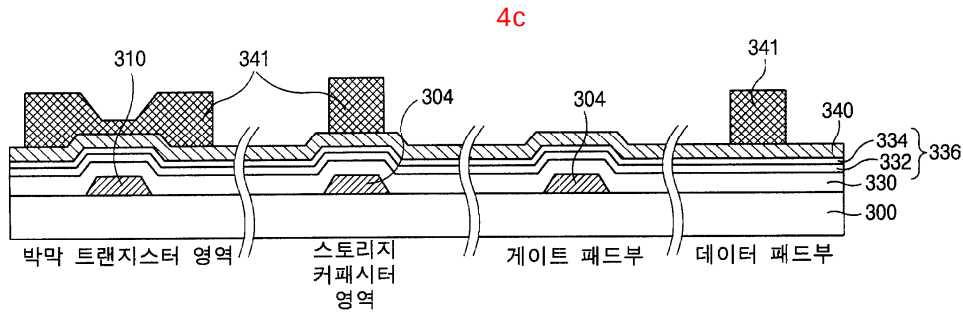
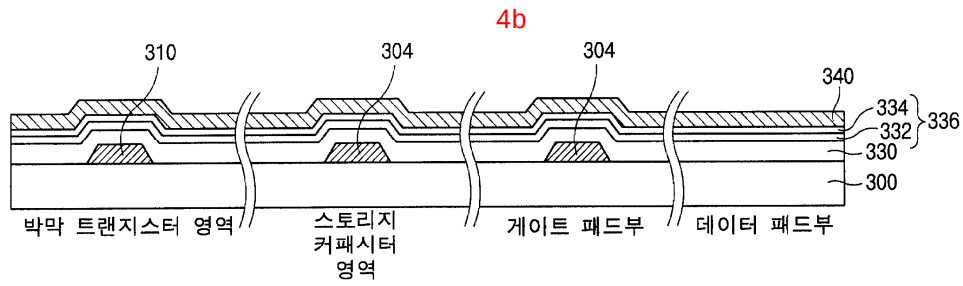
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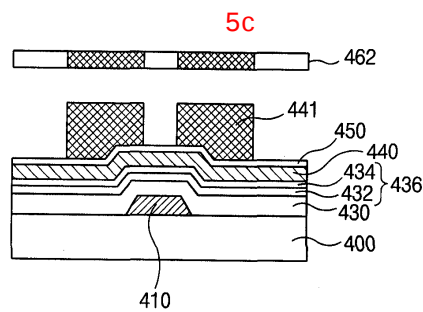
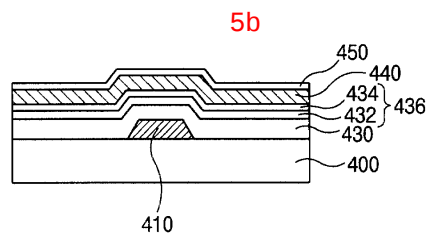
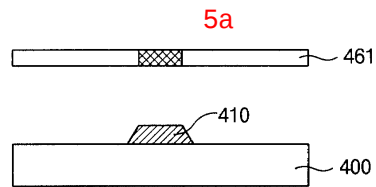
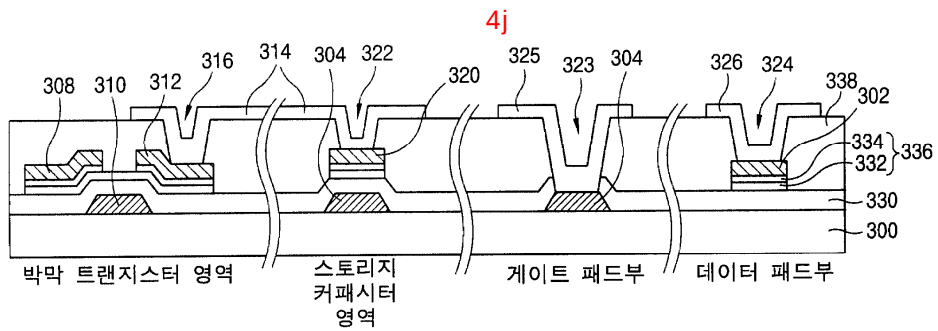
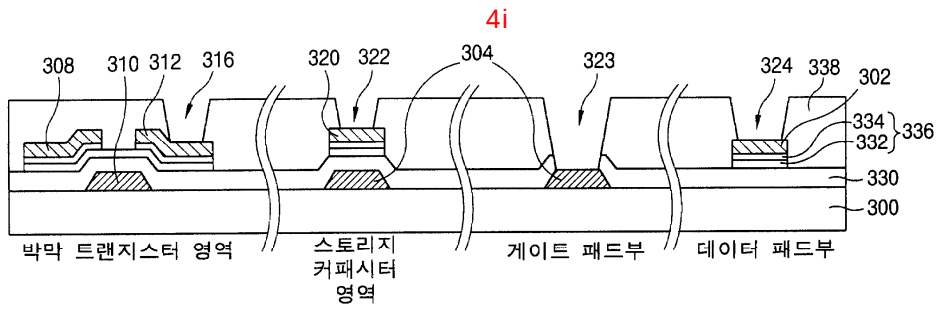
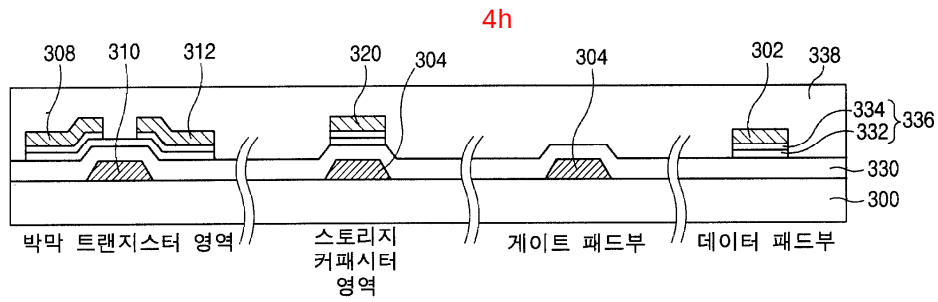
1 2 , BCB(benzocyclobutene), SOG(spin on glass) Acryl

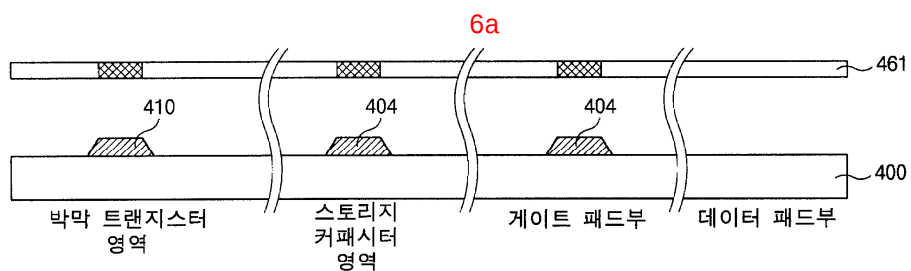
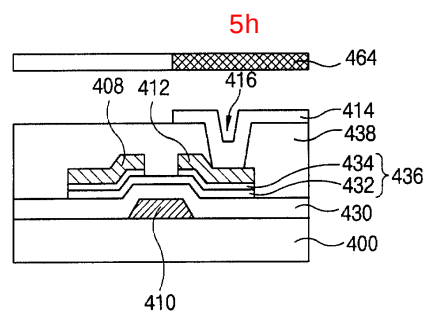
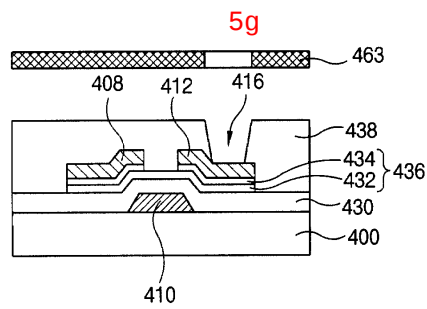
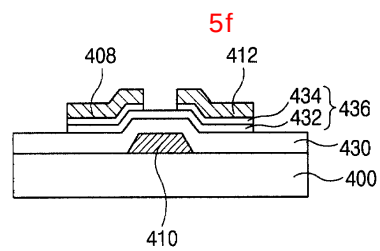
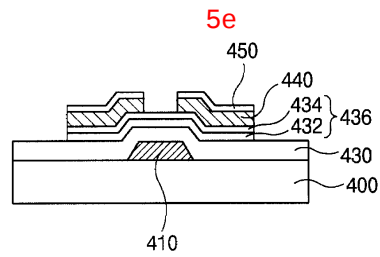
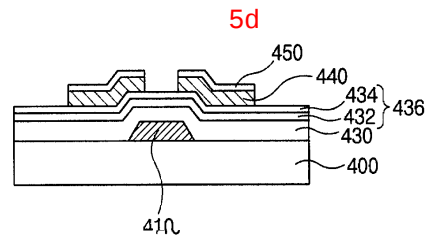


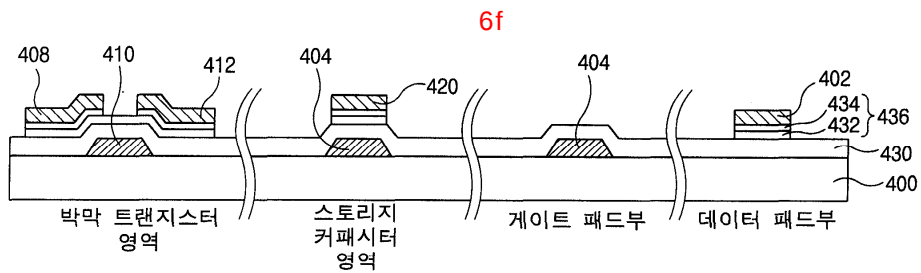
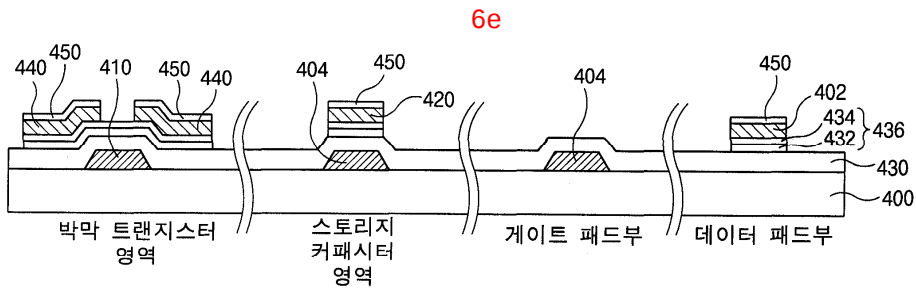
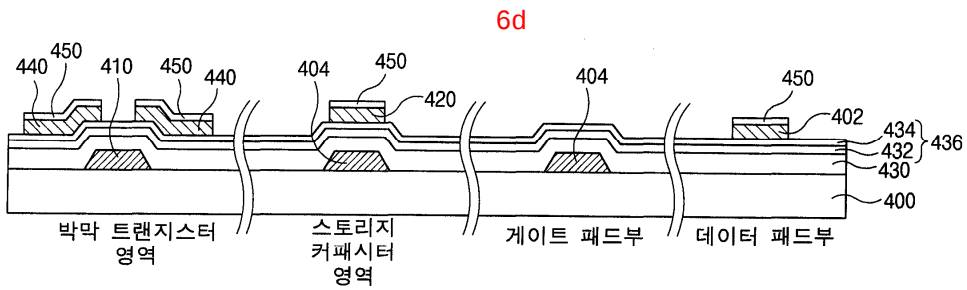
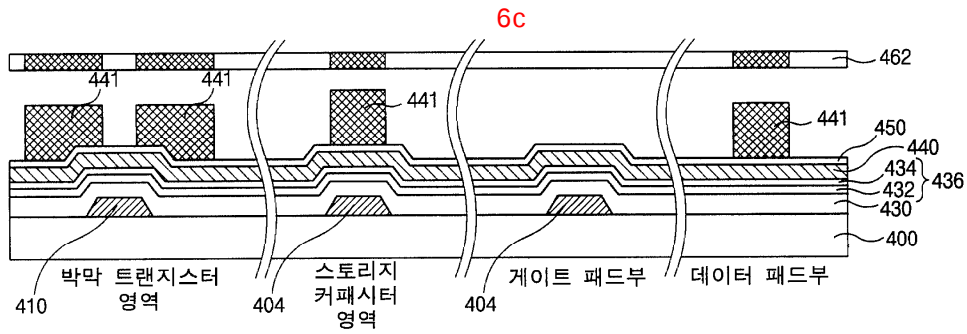
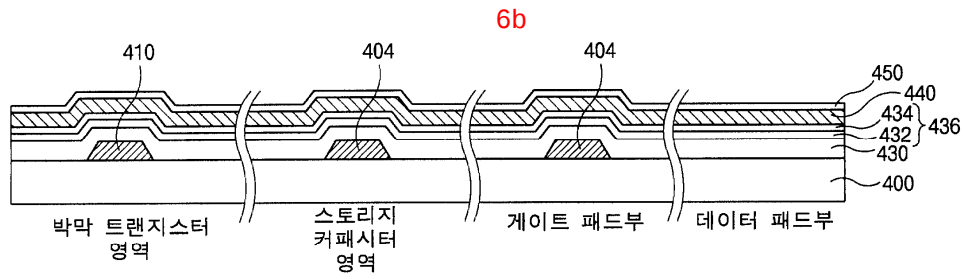


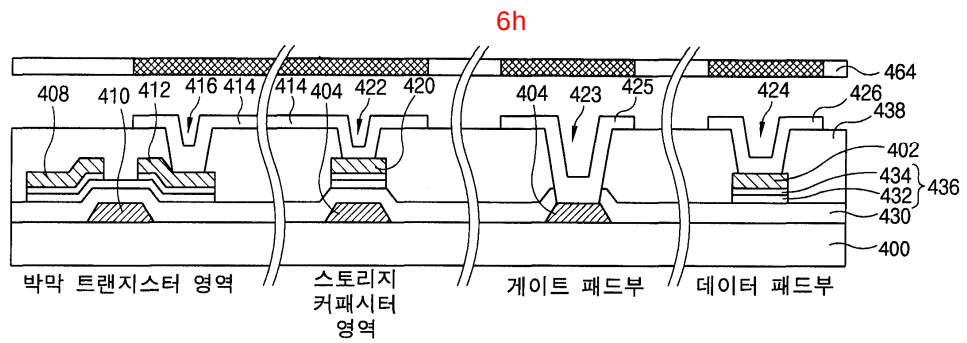
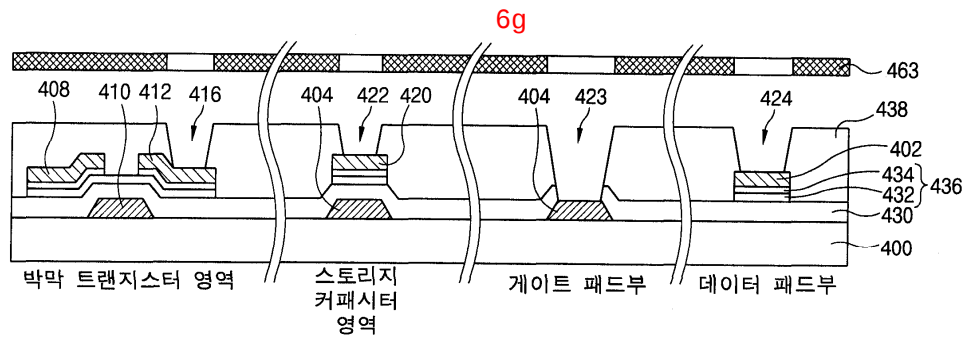












|                |                                                                                           |         |            |
|----------------|-------------------------------------------------------------------------------------------|---------|------------|
| 专利名称(译)        | 液晶显示装置的制造方法                                                                               |         |            |
| 公开(公告)号        | <a href="#">KR100442490B1</a>                                                             | 公开(公告)日 | 2004-07-30 |
| 申请号            | KR1020010083284                                                                           | 申请日     | 2001-12-22 |
| [标]申请(专利权)人(译) | 乐金显示有限公司                                                                                  |         |            |
| 申请(专利权)人(译)    | LG显示器有限公司                                                                                 |         |            |
| 当前申请(专利权)人(译)  | LG显示器有限公司                                                                                 |         |            |
| [标]发明人         | KIM EUGENE<br>김유진<br>CHO HEUNGLYUL<br>조흥렬<br>LEE KYOUNGMOOK<br>이경묵<br>NAM SEUNGHEE<br>남승희 |         |            |
| 发明人            | 김유진<br>조흥렬<br>이경묵<br>남승희                                                                  |         |            |
| IPC分类号         | G02F1/1333                                                                                |         |            |
| 代理人(译)         | PARK , JANG WON                                                                           |         |            |
| 其他公开文献         | KR1020030053215A                                                                          |         |            |
| 外部链接           | <a href="#">Espacenet</a>                                                                 |         |            |

#### 摘要(译)

目的：提供一种制造液晶显示器的方法，以使用四个掩模制造薄膜晶体管阵列基板，而不使用衍射掩模。组成：在基板（400）上形成栅电极（410），并在基板上依次形成栅极绝缘层（430），有源层（436），金属层和干涉金属层。将金属层和干涉金属层图案化成预定图案。使用金属层和干涉金属层图案选择性地蚀刻有源层。蚀刻干涉金属层。金属层图案用作源电极和漏电极（408,412）。在半导体层，源极和漏极上形成钝化层（438），并选择性地蚀刻钝化层以形成暴露漏极的接触孔。像素电极（414）形成在钝化层上，以通过接触孔连接到漏电极。

