

(19)  
(12)

(KR)  
(A)

(51) 。 Int. Cl. <sup>7</sup>  
G02F 1/136

(11)  
(43)

2002 - 0005151  
2002 01 17

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(21) 10 - 2000 - 0039140  
(22) 2000 07 08

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(71) .  
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20

(72) 224 - 5

505 513

(74)  
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(54)

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8c

1 TDTN .

2

3 90° TN

4 90° TN

5 IPS

6 VA TN

7 VA TN

8a 8c 1

9 1

10a 10c 2

11 2

12a 12c 3

< >

2 : 4 :

5, 7 : 6 :

8 : 10, 16 :

12 : 14 :

18 : 21, 22 :

가

(Vertical Alignment)

IPS(In Plane Switch)

(Multidomain)  
(Lateral electric field)

, 90° TN(Twisted Nematic)

가 TDTN(Two Domain Twisted Nematic : " TDTN" )

1

nd  
n

가

(Discotic Liquid Crystal)

가

(Optic axis)

(Positive uniaxial)

(ex - tr

ordinary refractive index)

(ordinary refractive index)

NW(Normal White)

(n  
90°

egative uniaxial)

TN

. 90° TN

가

가

3

4

/  
nd

TN nd 0.45~0.48μm E

TN

TN

60°

TN

TN

TN

6~10%

nd가

IPS

가

가

가

NB(Normally B

lack)

가

가

가

가

가 10

가 2μm

. 가

5

가

5

IPS

IPS , 가 TN 1/3  
 (coupling)  
 . 가 IPS  
 (Electrically Controllable Birefringence : " ECB" )  
 가 ,  
 가  
 LCD 가 . IPS TFT LCD  
 , 90. TN

6 (Vertical Alignment : " VA" ) 90. TN LCD . VA  
 TN LCD 100% 50%  
 TN 50ms VA 30ms , VA LCD AV .

7 discotic 90. TN LCD VA LCD  
 discotic . 90. TN LCD discotic  
 . VA LCD  
 가 . VA (Vertical Aligned)  
 . 90. TN LCD  
 가  
 . VA LCD TN  
 WV .

VA 가 . VA

, IPS 가 VA TN 가  
 , VA TN

가 .

8a 12c

8a 9 1

8a 8c 9

8a , TN 가 가

(4) (2) (4) (10) (S1), (2)  
 (S2). (2) (4)  
 (chiral dopant)  
 (monomer) (20) (S3).

8b (18)

(5)가 (5)가 (18) (5) (18) (5)가 (18) ( " " ) (18) ( " " ) (chain grow  
 5)가 (18) (5) (18) ( " " ) (5)가 (18) ( " " ) (18) ( " " ) (chain grow  
 8) (S4), (18) ( " " ) (18) ( " " ) (chain grow  
 th) (21) (22) (polymer)  
 (S5). (21) 가 (21)  
 (S6), (22) 가 (21)  
 (21) 가 (S7,S8). (22) 가 (21)  
 (21) (S10), (22) (domain) (S9),  
 8C (Multi - domain)

10a 11 2

10a 10c 11

10a , TN 가 가

(2) (4) (10,16) (10,16)  
 (chirality) (2)  
 (4) (10,16) (10,16) (S11).  
 (2) (4) (S12), (2) (4)  
 (chiral dopant)

( (monomer) ) (S13). ,  
 . , 10b (18)  
 (5)  
 (5)가 (18) (5)가 (18)  
 (5)가 (18) (5) ( " " ) (5)가  
 (S14), ( " " )  
 ) (21) ( " " )  
 chain growth) (22)  
 (S15). (21) 가  
 (polymer) (S16), 가 (21)  
 (21) 가 (S17,S18). (22) 가  
 가 (S19), (21)  
 (S20), 10C (Multi - domain)

12a 12c 3  
 3 1 가  
 12a , TN 가 가

(2) (4) (10) (2)  
 (4) (2) (4) ( )  
 (monomer) (chiral dopant)

8) 12b (18) 4 (1)  
 (18) (7)가 (18) (7) (7)가  
 (18) (7) (7)가 (18) (7)가  
 (18) ( " " ) (18) ( " " )  
 (21) (chain growth)  
 (22)  
 (21) 가 (polymer)  
 (22) 가 (21) (21)  
 가 (22) (domain) (21)  
 (22) 12C (Multi - domain)

가

(57)

1.

2.

1

3.

1

가

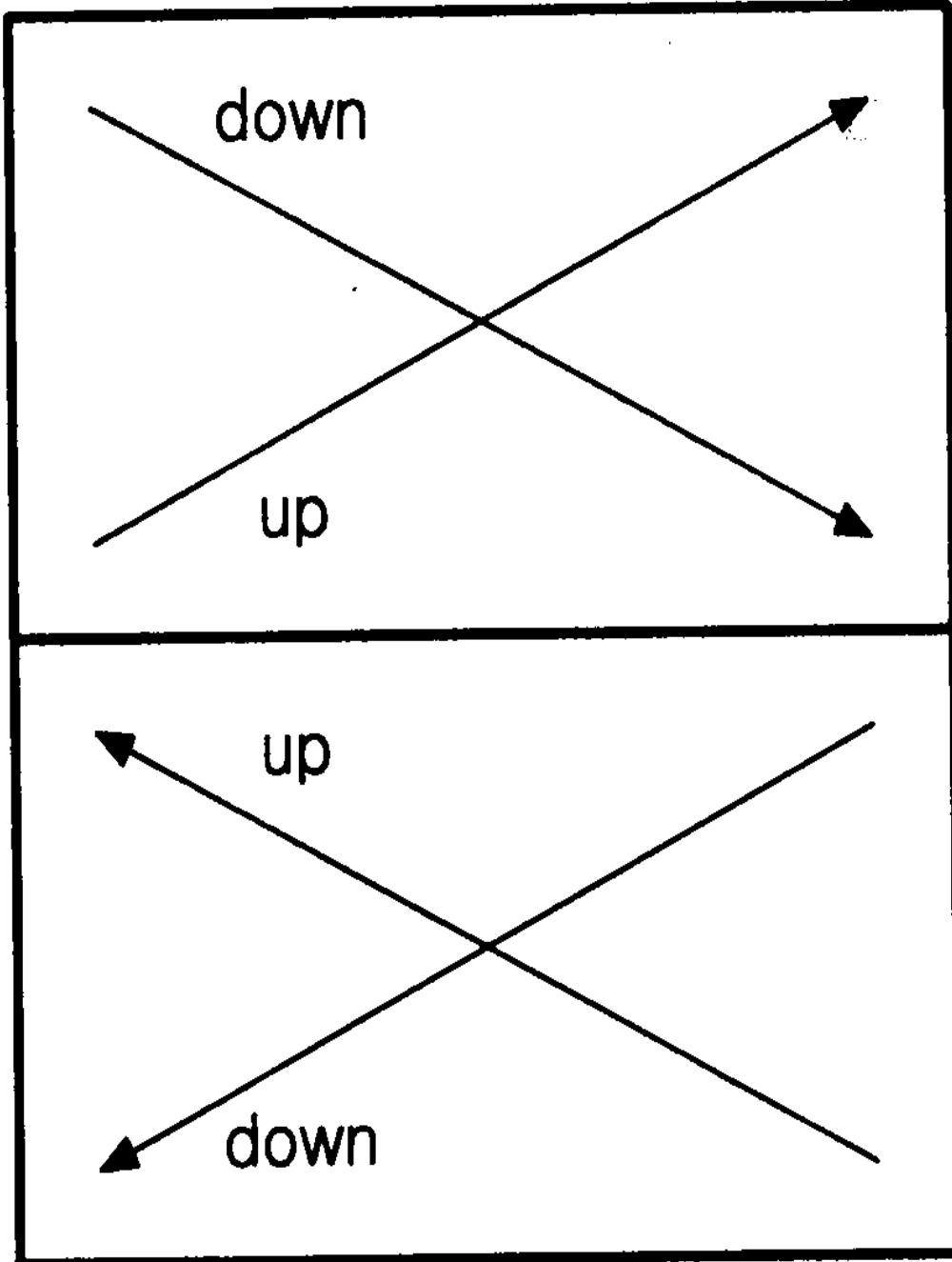
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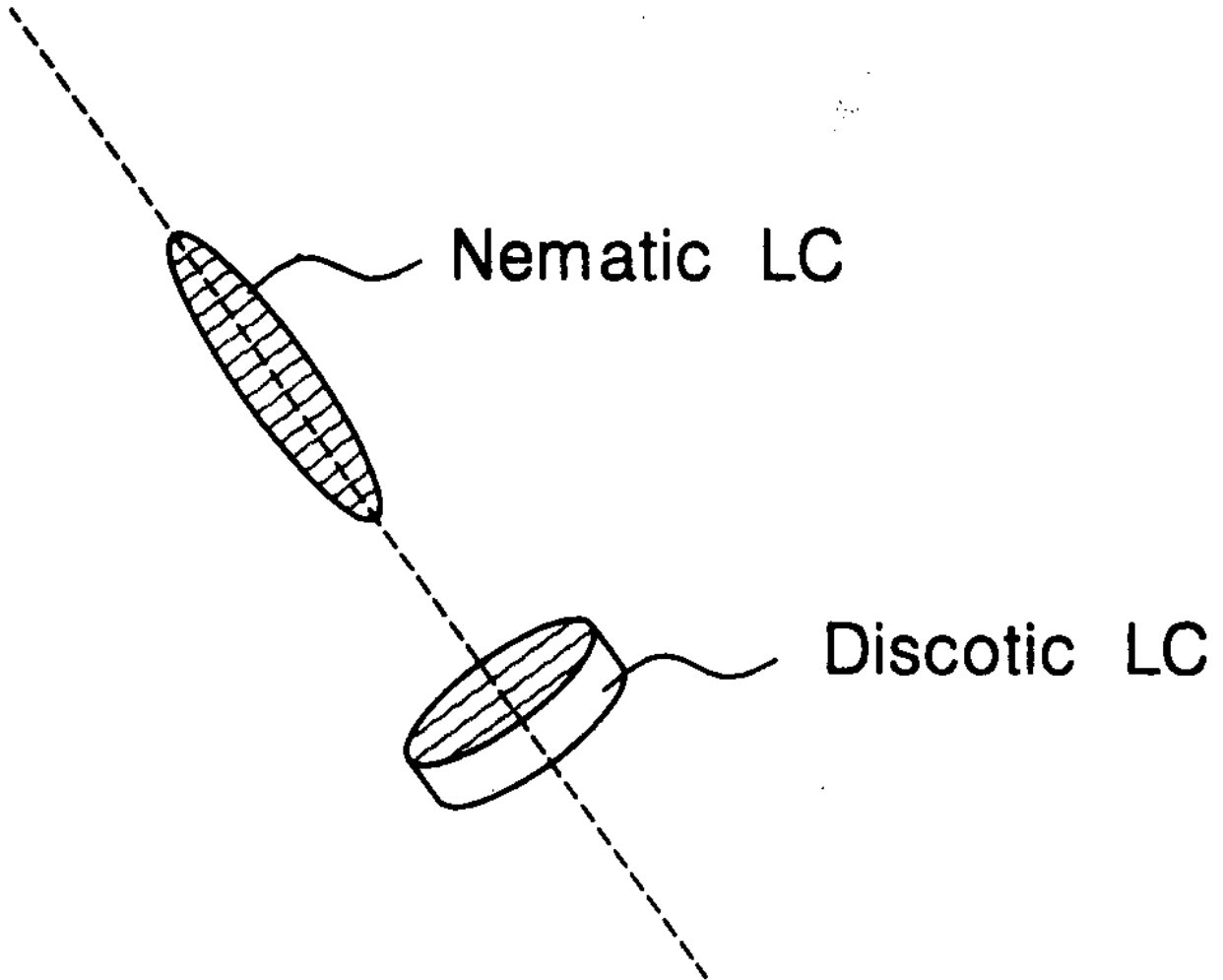
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4

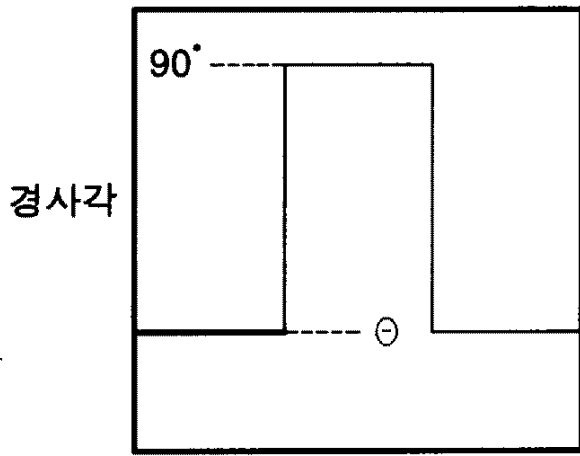
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1

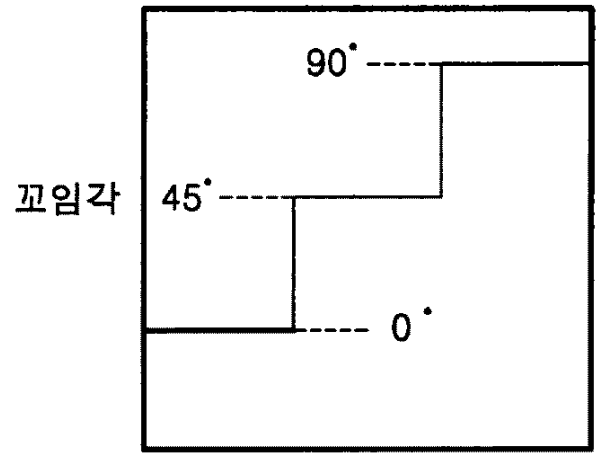




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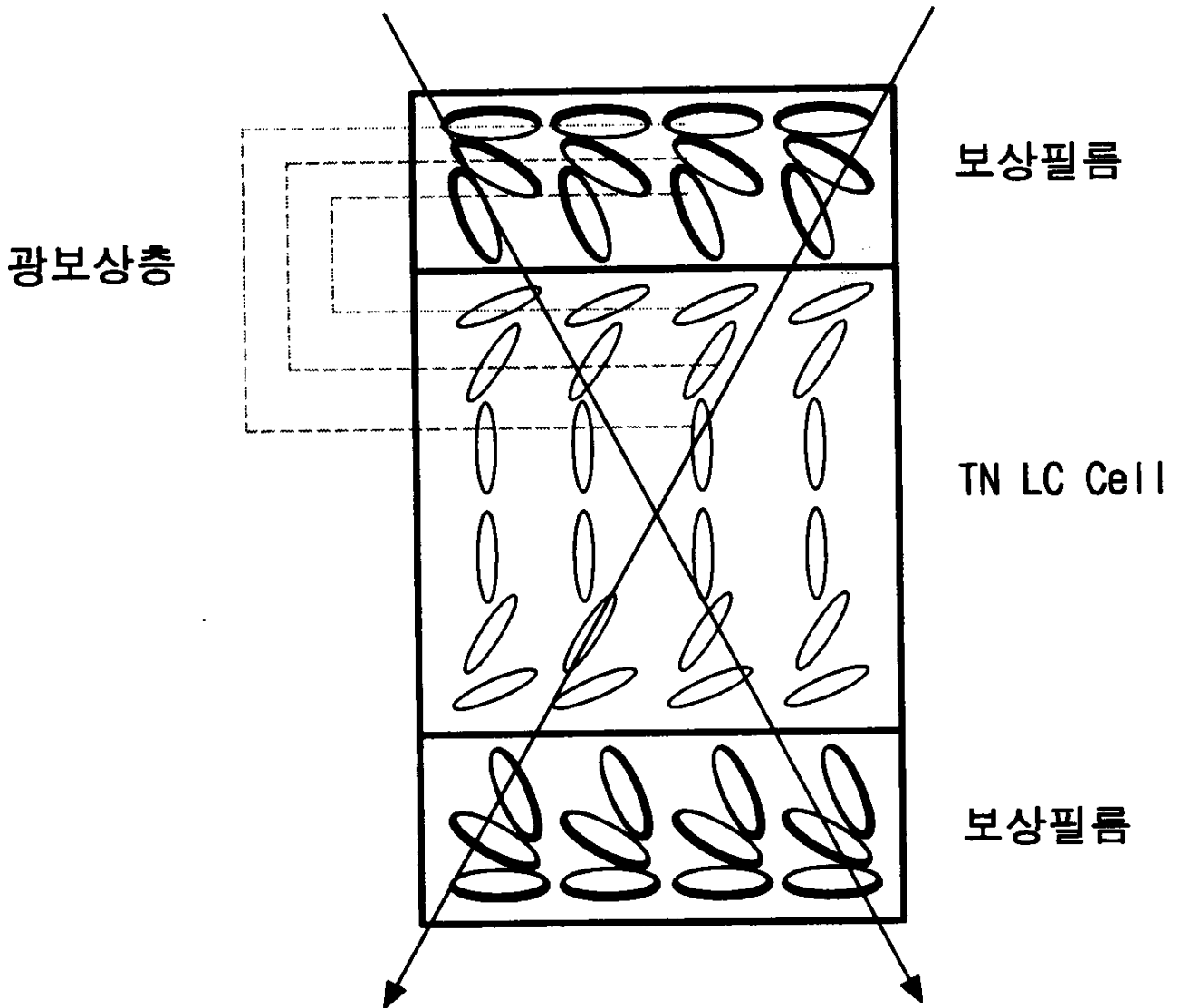


Cell gap

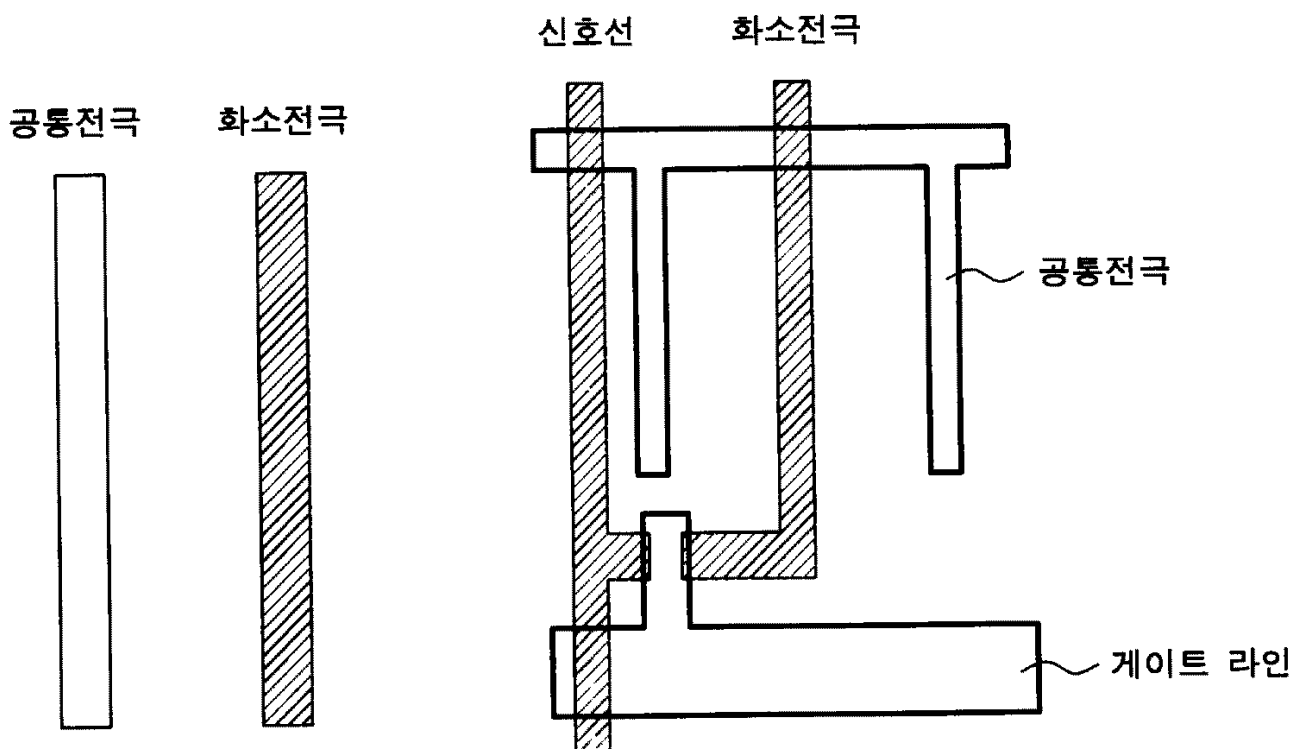


Cell gap

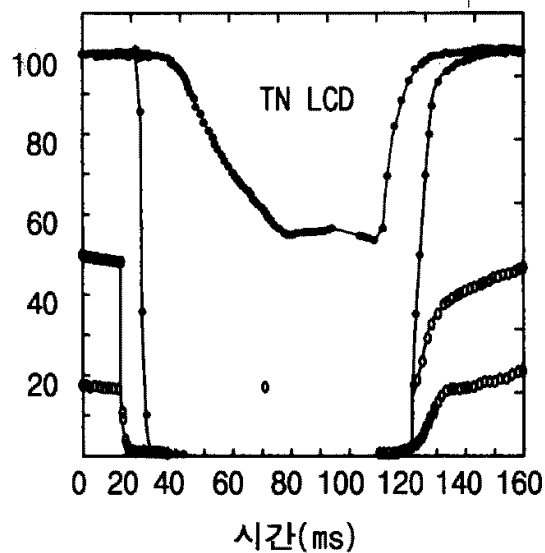
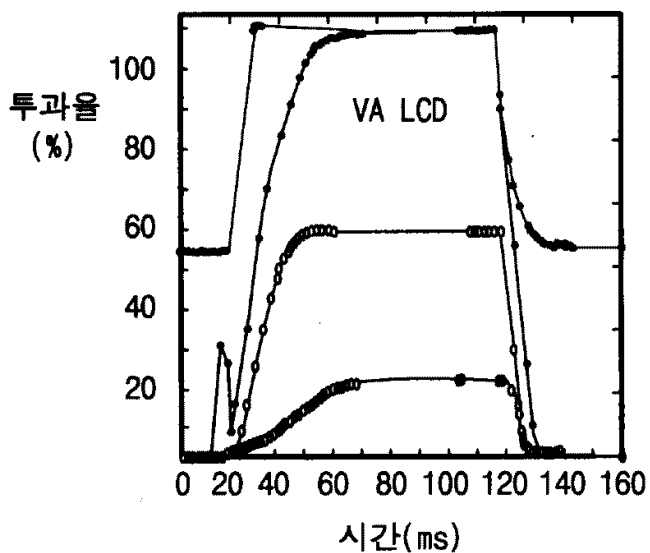
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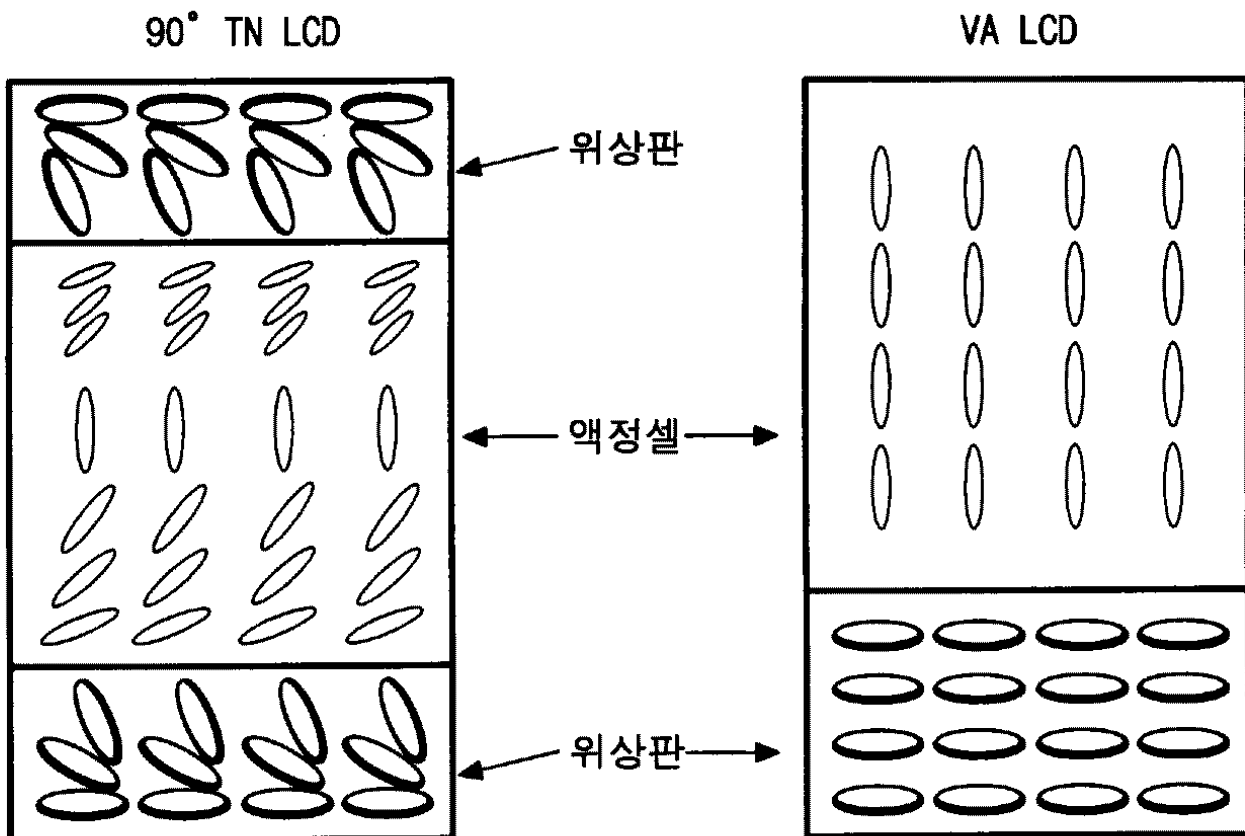
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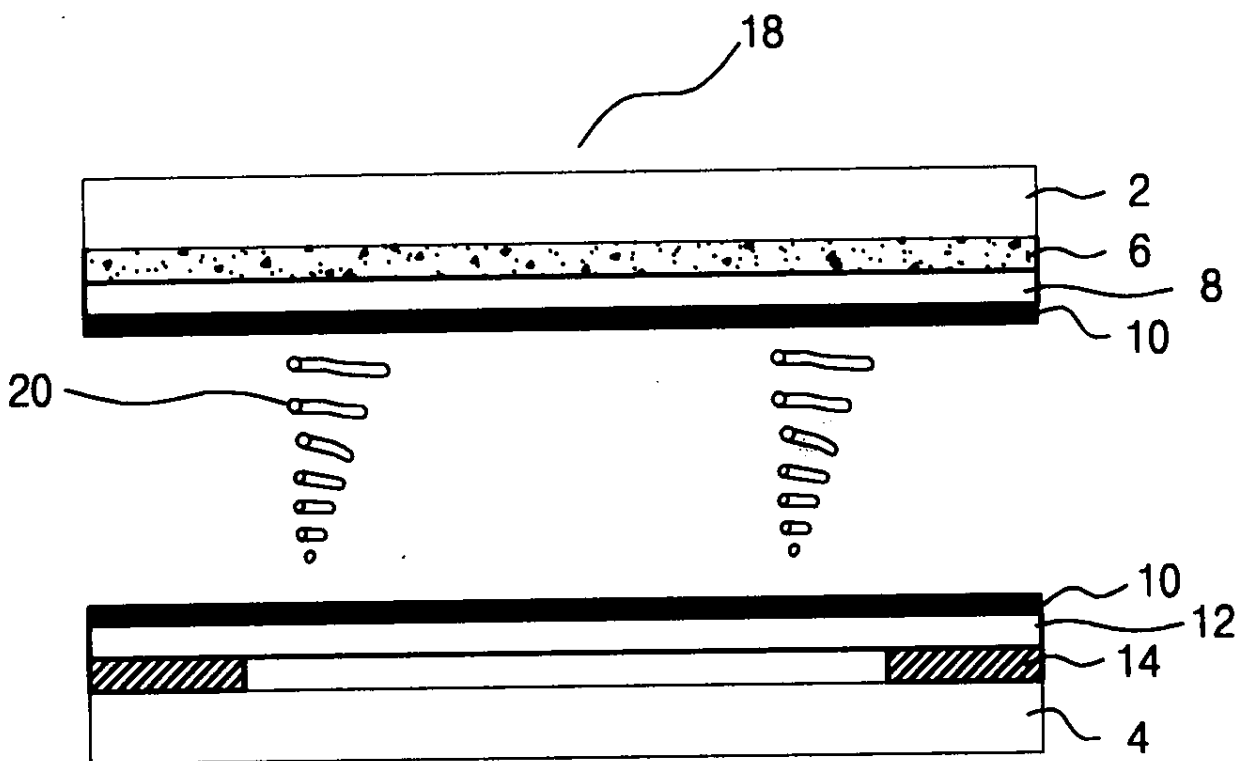
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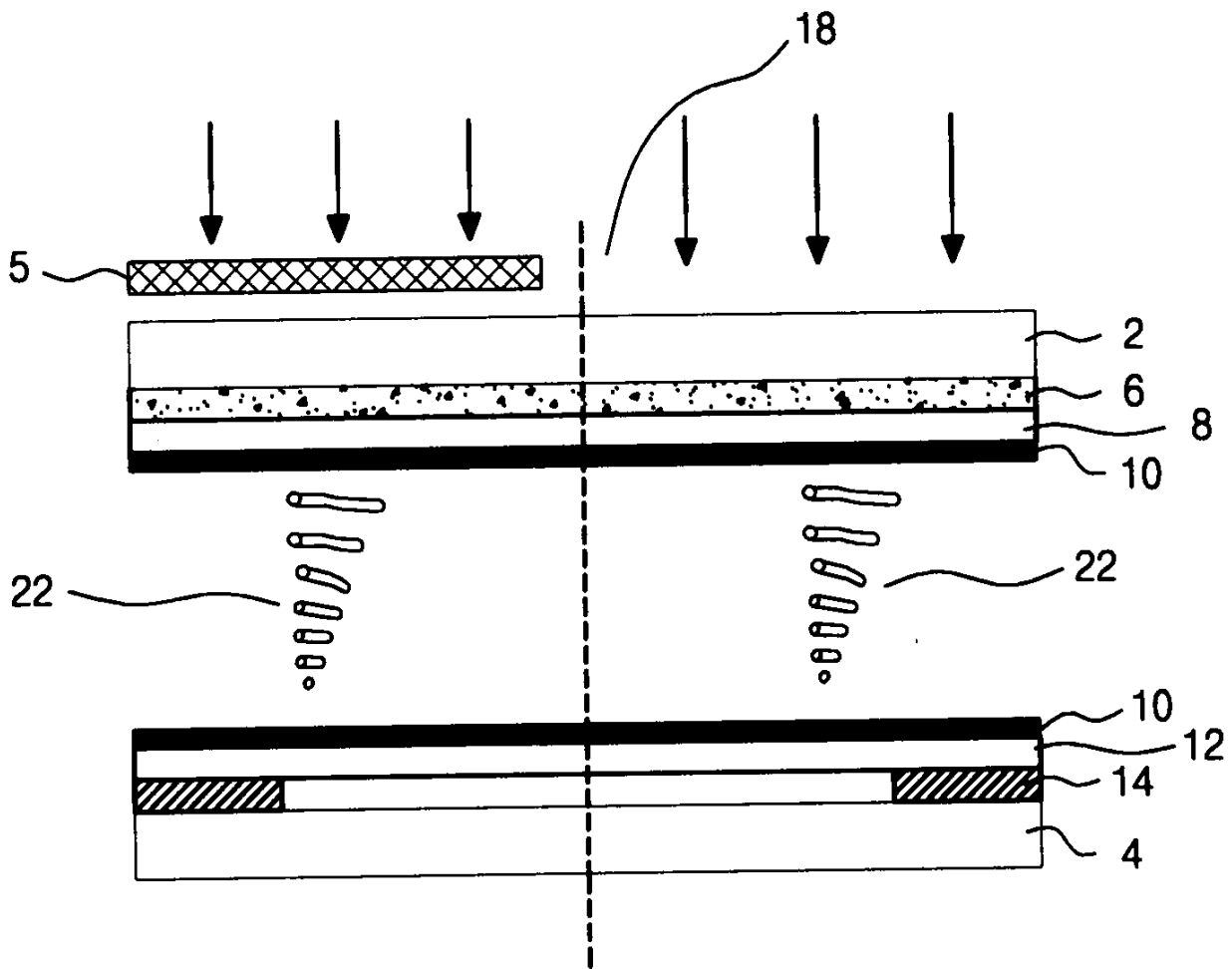
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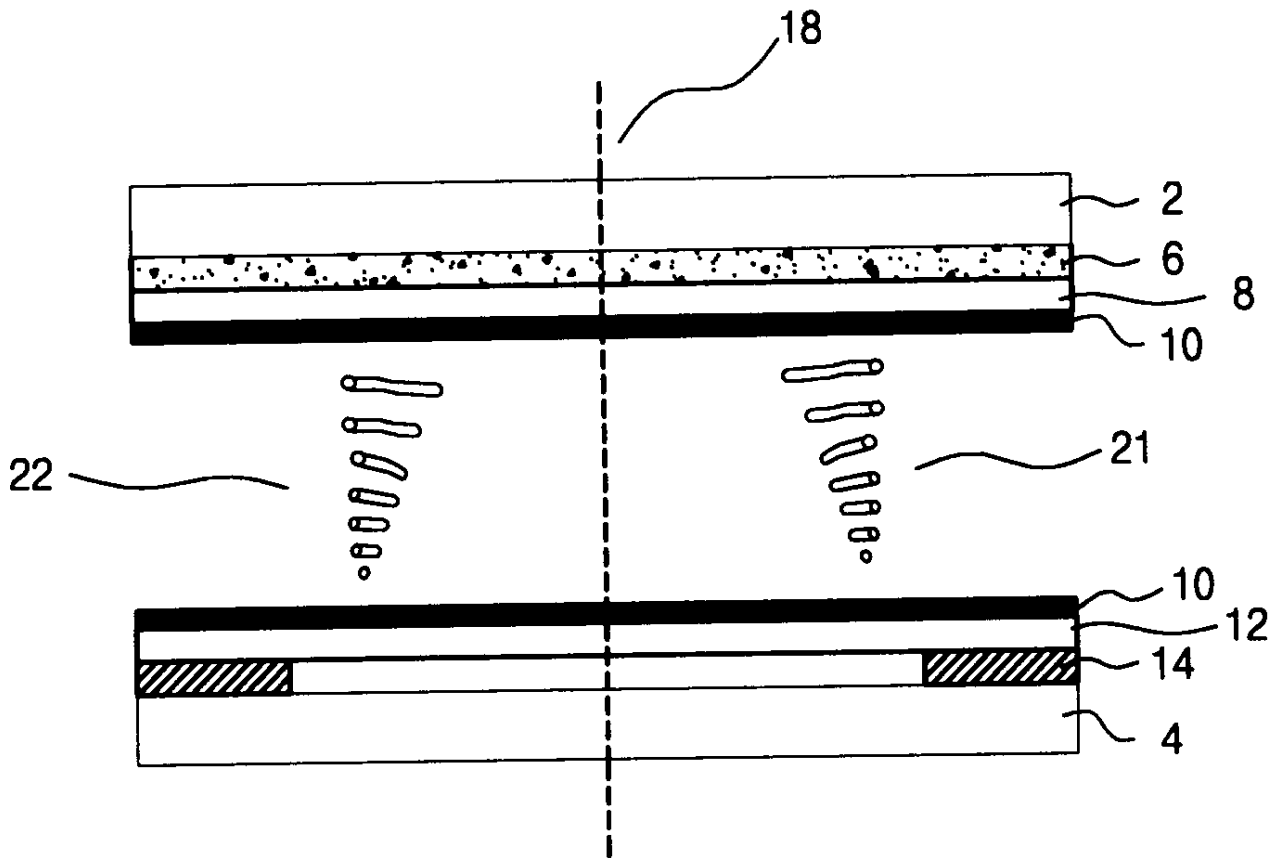
8a

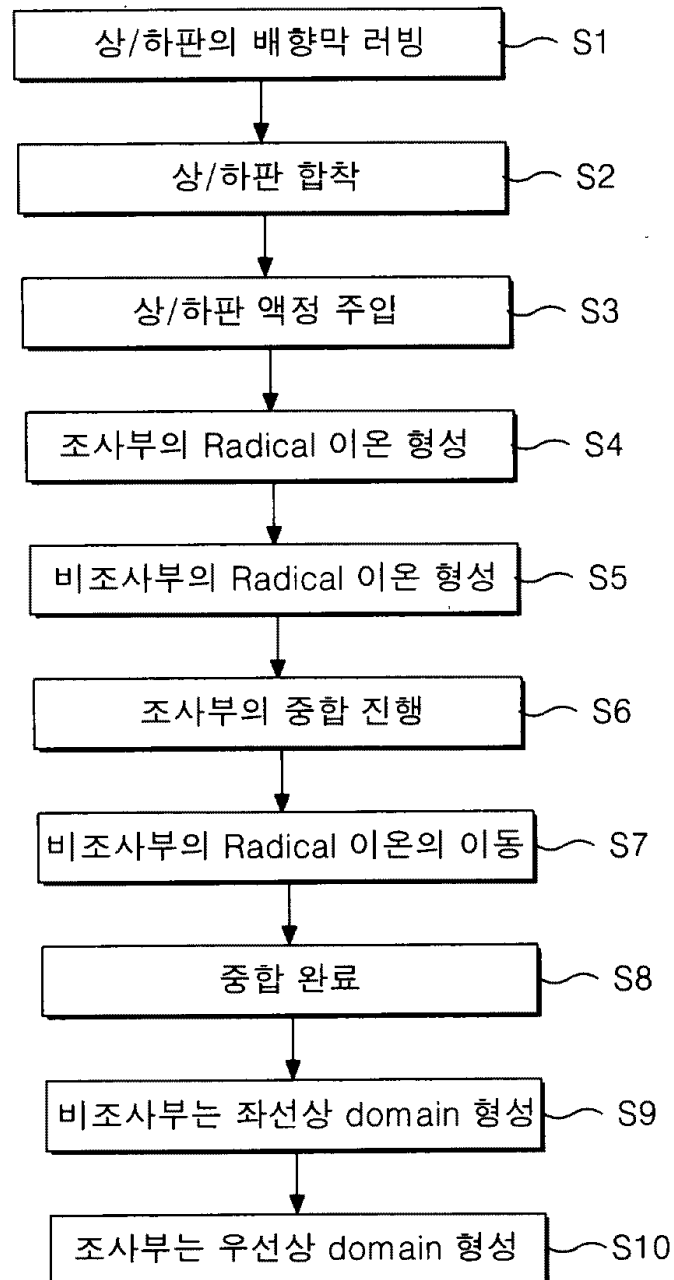


8b

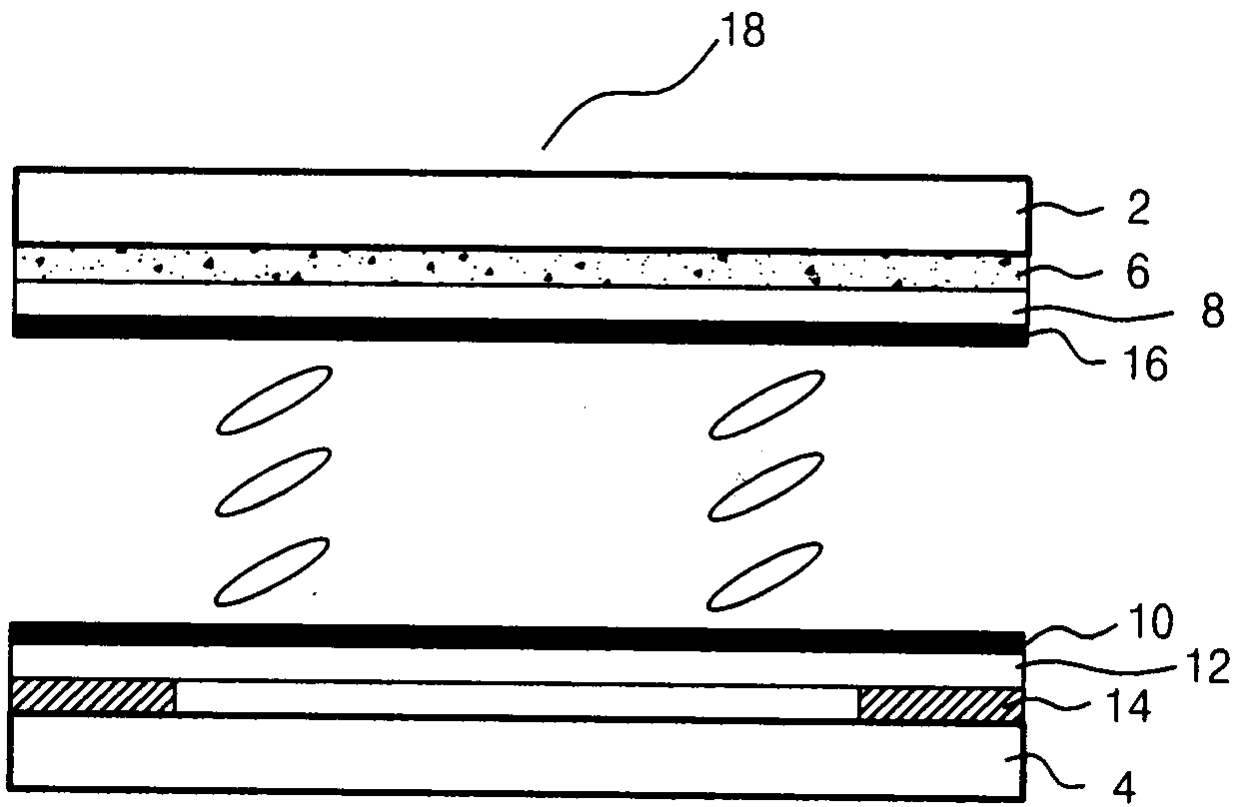


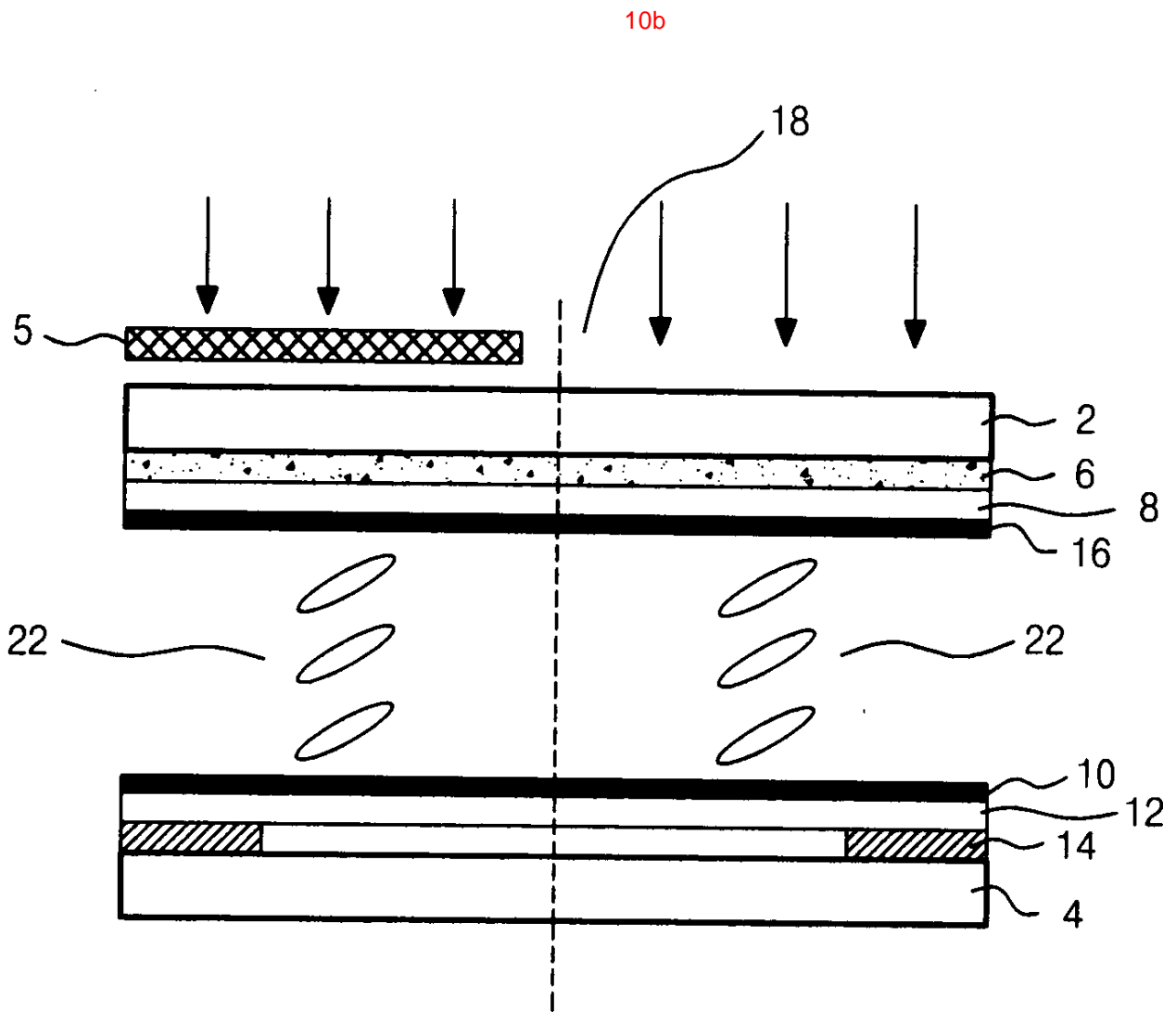
8c

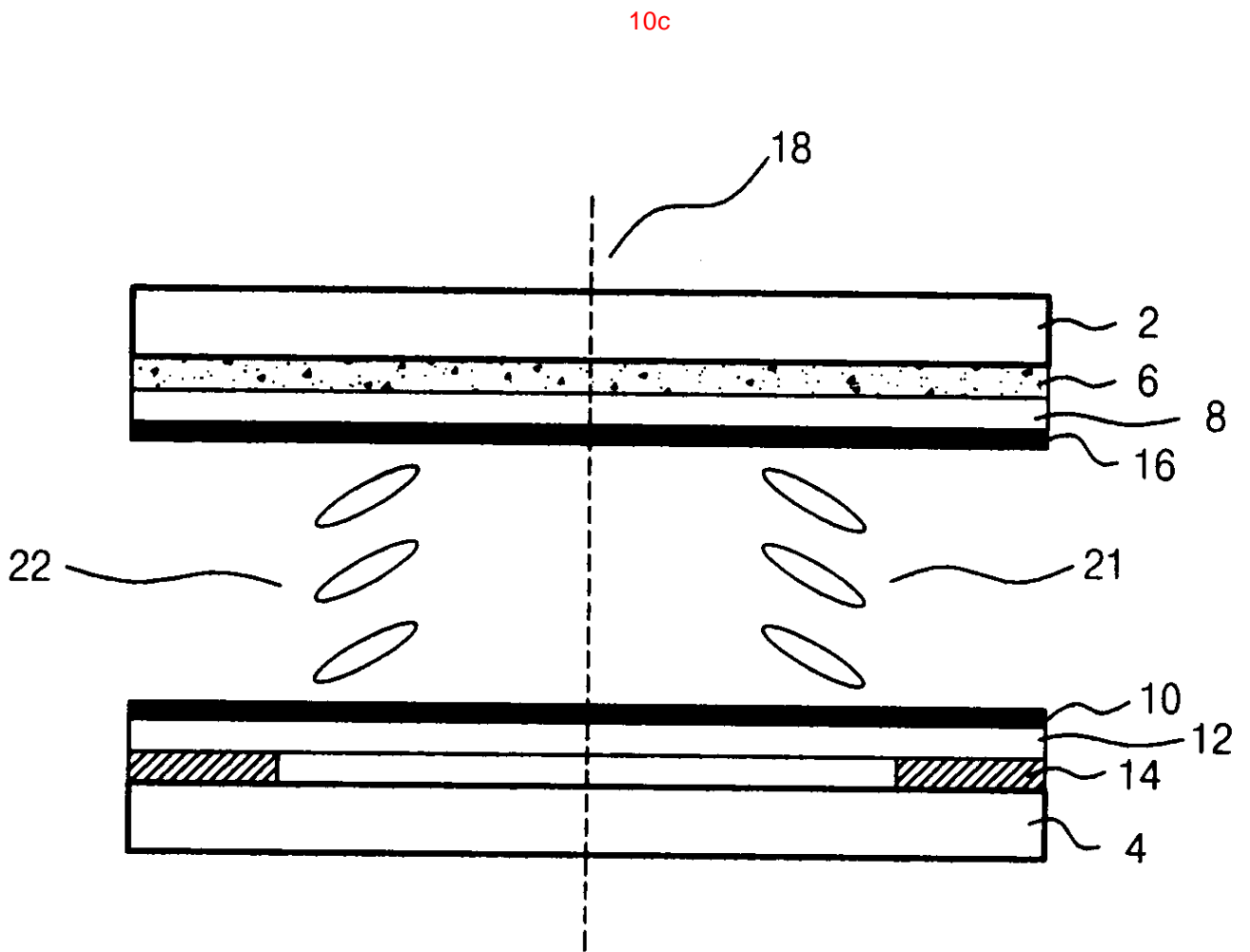


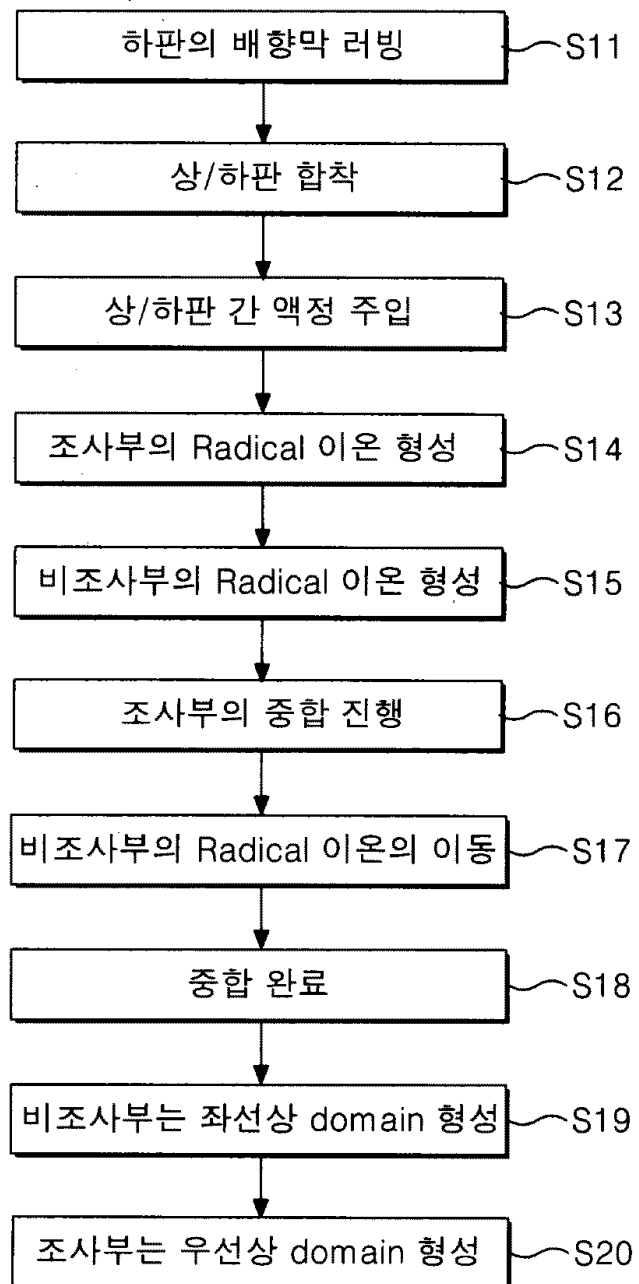


10a

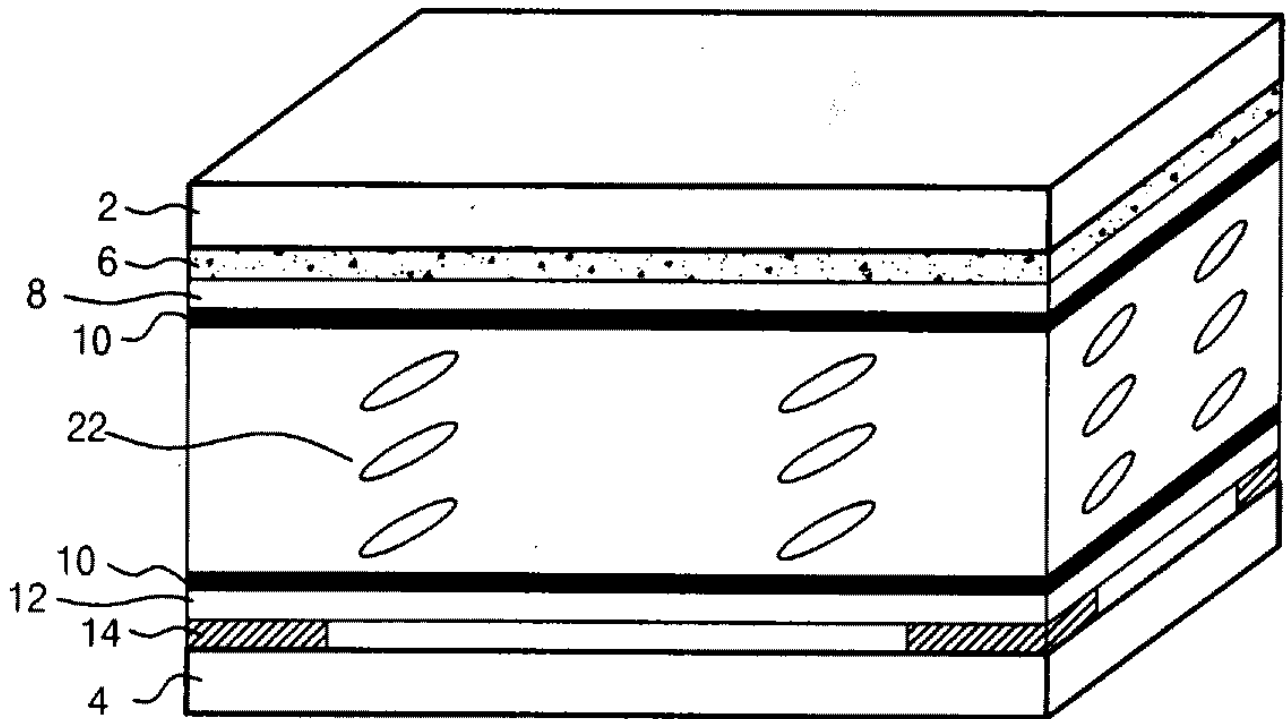




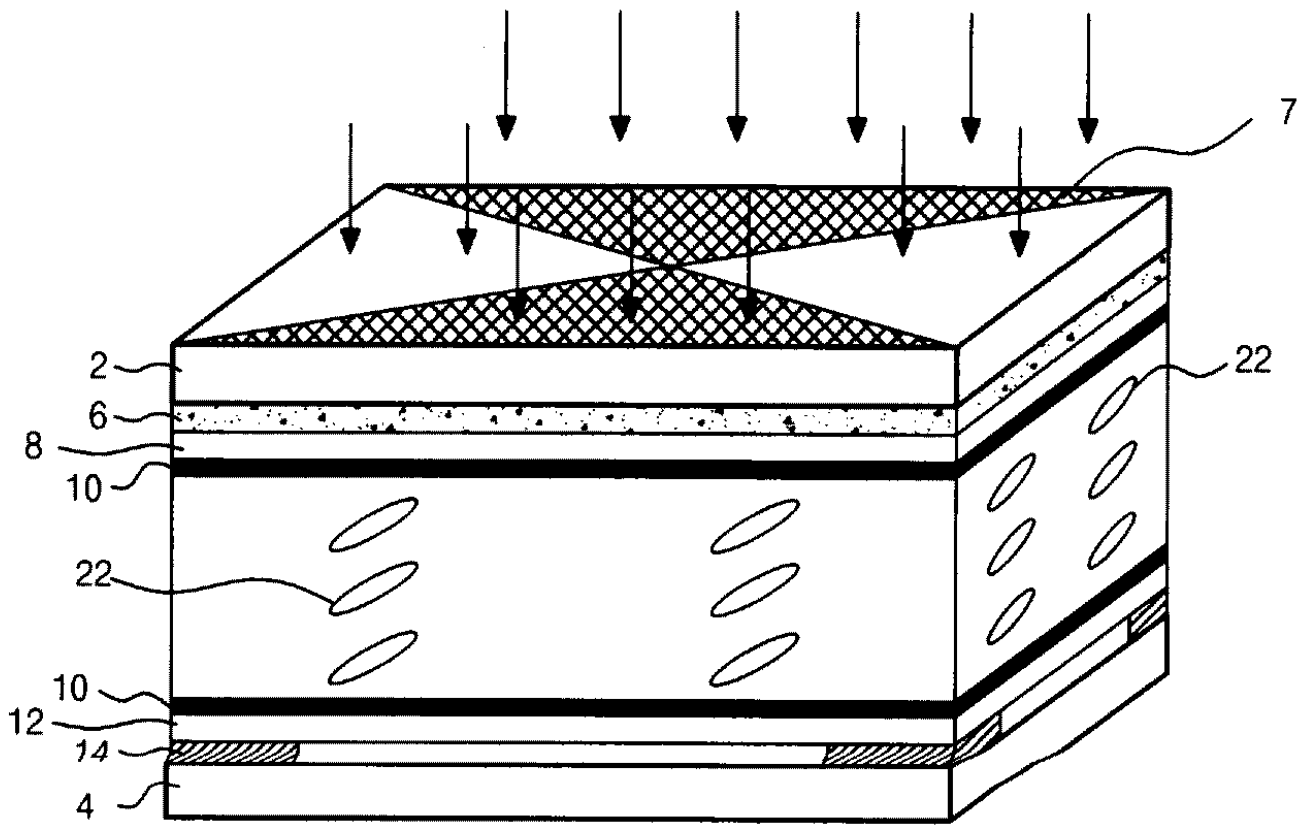




12a



12b



12c

