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(71) 가 가 1-1-2

(72) 1 1 2 가 가
1 1 2 가 가
1 1 2 가 가
1 1 2 가 가
1 1 2 가 가
1 1 2 가 가

(74)
:

(54) ,

(A) , 가 20 300nm, 가 1.0
가 3nm, 가 1.0
(B) 가 10nm, 가 50nm (Re)

1

(Optically Compensated Bend) , 3 VA (Vertically Aligned) , OCB
 (nx, ny, nz) 「nx ny nz」가 (X, Y, Z) (nx, ny, nz)
 「nx ny nz」가 nx ny=nz 2 「nx ny nz」
 「nx ny nz」가

가 , 1 「nx ny nz」 , 가
 가 「nx ny nz」 가
 가
 (「nx ny nz」 2000-190385)
 가

(B)

(Re) 가 10nm
 (Rth) (Re) (Rth-Re) 가 50nm

Re=(nx - ny) · d

Rth=(nx - nz) · d

, nx, ny nz

X , Y Z

X , X

, Z X Y

, d

X

(B) (Rth-Re) 가 50nm , (A) (Re) 가 10nm , (Rth) (Re)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

(A)

(Rth)

(B) (Re) (Rth-Re) 가 50nm

(Re) 가 10nm

「nx ny nz」

(A) (B) Re VA , OCB

10nm

, Rth

X , Y Z

Re (Rth-Re) 가 50nm

Re 10nm 가

Rth-Re 가 50nm

Re 10 500nm , 50 1,000nm

20 300nm , 50 900nm

(Rth-Re) 50 800nm

Rth 60nm , 60 1300nm

60 1500nm

Rth/Re 1

60 1400nm

th-Re) e(A) 가 20 300nm , [Rth(A)/Re(A)] 가 1.0 A) 가 1.0

(B)

[Rth(A)]

Re (R [R [Re(A)] [Rth(A)/Re(A)]

Rth(A)/Re(A)

가 20nm

1.2

300nm

1.2 40

$$Re(A) = (n_x(A) - n_y(A)) \cdot d(A)$$

$$Rth(A) = (n_x(A) - n_z(A)) \cdot d(A)$$

(A) X, Y, Z, d(A) (A)

(B) X, Y, Z, d(B) (B) X, Y, Z, d(B)

[Re(B)] 가 3nm, [Rth(B)] [Re(B)] [Rth(B)/Re(B)] 가 1.0
 Rth(B)/Re(B) Re(B) 1.2, 3 800nm, 1.2 160, 5 500nm, d

$$Re(B) = (n_x(B) - n_y(B)) \cdot d(B)$$

$$Rth(B) = (n_x(B) - n_z(B)) \cdot d(B)$$

(B) [Re(A)] [Re(B)] 가 0nm

[Re(B)] 가 3nm, [Rth(A)] (B) [Re(A)] [Rth(A)/Re(A)] 가 1.0 [Re(B)] [Rth(B)/Re(B)] 가 1.0

ny=nz 2, 1 500μm, 1mm, 5 300μm, [nx

400μm, 2 30μm, (A) 50 400μm, 1 800μm, (B) 5 500μm, 1 50μm, 10

(A) (A) 가 (A) 가

(A) 가 가 (A) 가 ()

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, 2 (A)

가

가

N-

(B)

n_x n_z , n_y n_z

(B)

1
2
가

(Mw) 1,000 1,000,000

2,000 500,000
DMF (N,N-

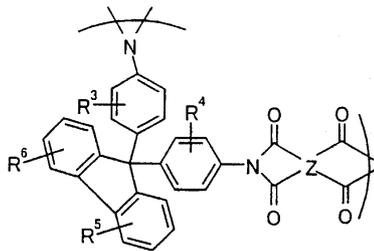
(GPC)

2000-511296

, 9,9- (1)

가

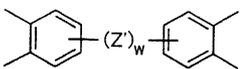
2



(1)

(1), R^3 R^6 , C_{1-10} , C_{1-10} , C_{1-10} , C_{1-10} , R^3 R^6

(1), Z C_{6-20} 4가 (2)



(2)

(2), Z', $C(R^7)_2$, CO, O, S, SO₂, Si(C₂H₅)₂, NR⁸, $C(R^9)_3$, R⁸, R⁹, C_{6-20} , R⁷

C_{1-10} , 4가 F Cl

가 8-511812 가 (3) (4) (5) (5)

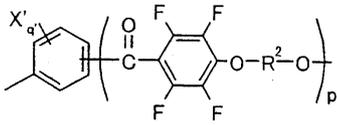
ert- 가 , , , , , sec- , t

(7) , q 0 4 가 (位)

(7) , q=0 , ,

(7) , R¹ (8)

, m 0 1 .



(8)

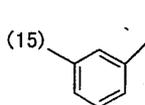
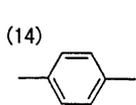
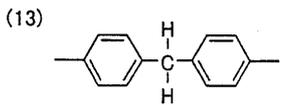
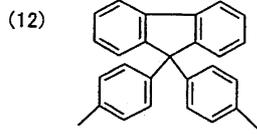
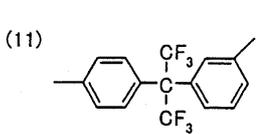
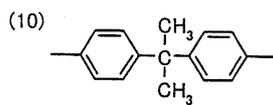
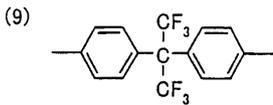
(8) , X' , q' X' , p 0 1 .

(7) , X 0 4 .

(8) X' 가 , q'=0 .

(8) , R² 2가 , o-, m- p- 2가 , 2가 , R² 가

o-, m- p- , 가, (9) (15)

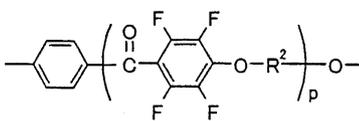


(7) , R¹ (8)

(16)

가 ,

(16) R² p



(16)

(7) , n

2 5000 ,

5 500 . ,

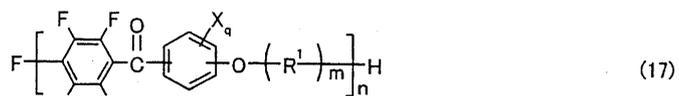
(7)

, p-

(17)

n

(7)

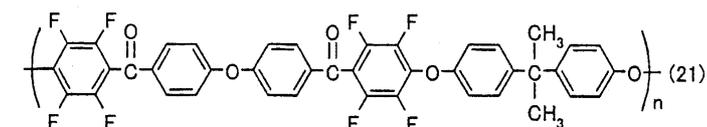
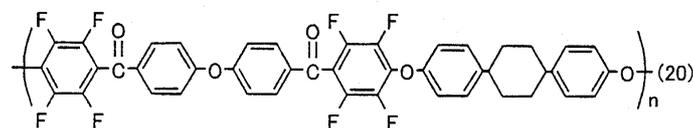
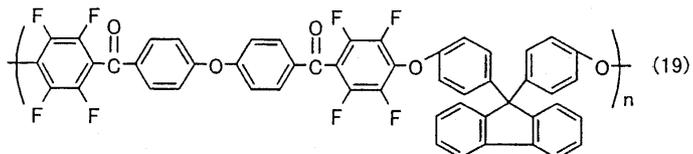
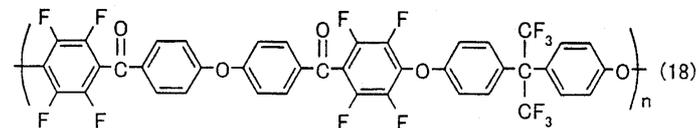


(7)

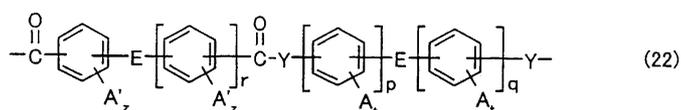
n

(7)

(18) (21)



10-508048
(22)

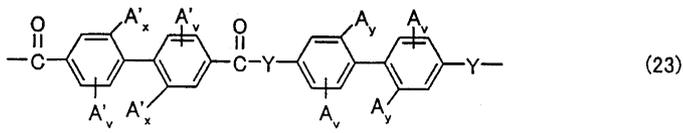


(22) , Y O NH , E
, C(CX₃)₂ (X 1 ,) , CO , C₂ , O , S , SO₂ , C₂ , CH₂
C₁₋₃ 1 , Y E , R N(R)
C₁₋₃

(22) , A A' , t z
, q 1 3 , r 0 3 . , p 0 3

A , C₁₋₃ , C₁₋₃ , OR (R) , C₁₋₉ , C₁₋₉ , C₁₋₁₂ , C₁₋₁₂ , C₁₋₁₂ , A
12 , C₁₋₁₂ , C₁₋₁₂ , C₁₋₁₂ , C₁₋₁₂ , C₁₋₁₂ , A
, C₁₋₃ , C₁₋₃ , t 0 4 , z 0 3 , C₁₋₃ , C₁₋₃

(22) (23)



(23) , A, A' Y (22) , v 0 3 , 0 2
 . x y 0 1 0

] 가 20 300nm , (A) [Rth(A)] (A) [Re(A)] [Rth(A)/Re(A)] 가 1.0 [Re(A)]

, 가 , 가 , 가

, (A) ,

, (A) , 10 800μm , 10 700μm ,

, (B) [Rth(B)/Re(B)] 가 1.0 [Re(B)] 가 3nm ,

(B) , nx nz, ny nz (nx ny nz)

(B) ,

(A) , (A) (B) (A) , 가

, 가

, 가

, 가

, 가

, 가

, 가

100 , 5 50 , 10 40 ,

; , , , 1,2-
 ; , , , , 2- , N- -2-
 ; t- , , , , 2
 - -2,4- ; , , , ;
 , , , , 1 , 2 ;
 .

가 , 가 , 가 .

A), ABS (PC), AS (PA; (PE), (PP), (PS), (PMM
 가 (PET), (POM), (PBT)
 가 (PI), 가 (PCT), (PPS), (PAR), (PES), (PK), (LCP)

0 50 % , 0 30 % . , , , , ,

가 , 40 300

50 250 , 60 200 . , , , , ,
 10 30 , 30 25 , 1 20 .

(B) 가 5% 가 , 2%
 0.2% .

(B) , , nx ny nz
 가 , 가 (nx ny nz) (B)

100μm , 10 200μm , 20 150μm , 30

가 , 가
 60 180 , 가 25 300 , 50 200 , 가
 0 10% . 100% ,

, , nx ny nz (B) , , (nx ny nz) , ,

가

가 , 80 250 , 120 220 , (Tg), 가 1
40 200 Tg

(A) (B) (B) , (A) (1) (B) , (A) 1

가

(A)

(B)

(B)

(B)

(A)

(A)

(B)

가

가

가

가

1

1 500 μ m

가

,가

가

,가

, 가

2

(A)

(B)

가

(A)

(B)

(A)

(A)

(A)

(A)

,가

가

(PVA)

PVA

PVA

PVA

1 80 μ m

TAC

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가 가 N-

(Rth) -90nm +75nm -80nm +60nm
 -70nm +45nm -90nm +75nm
 () nx, ny, nz , d

$$R_{th} = \{ \frac{(n_x + n_y)}{2} - n_z \} \cdot d$$

가 가

$$\sqrt{WV}^2$$

500μm 5 300μm, 5 150μm

가

가

가 가

0.5 20μm
100

2 70 가 5 50

()

((A), (B),)

가 PVA PVA

가 가

1nm 500nm 10nm 300nm 20nm 100nm

가 PVA 가 가

A 가 PVA 가 PV

가 Z

1/4 (/4)

가 1 2 가 1 2

가 가

()

()

()

가

()

가

3M

「D-BEF」

「PCF350」, Merck

「Transmax」

가

2

가

가

가

1

1 500 μ m

가

, Re(B)=3nm, Rth(B)=110nm, Rth(B)/Re(B)=32.7 (B) ,
 (A) 15μm PET PET

(A-2)

70μm 160
 1.1 64μm, Re(A)=65nm, Rth(A)=70nm, Rth(A)/Re(A)=1.1 (A)
 (A) A-1
 (150 ; 5), (A) (B)
 (B) 5μm Re(B)=5nm, Rth(B)=180nm, Rth(B)/Re(B)
 =36.0 (B) (A)

(A-3)

A-1 80μm (TAC)
 , 180 5 가 , 2.0
 TAC ((A) (B)
 (A) 가 67μm Re(A)=30nm, Rth(A)=55nm, Rth(A)/Re(A)=1.8
 (B) 가 5μm Re(B)=40nm, Rth(B)=198nm, Rth(B)/Re(B)=5

(A-4)

4,4'- (3,4-)-2,2- 2 2,2'- -4,4-
 60,000 , 20 %
 80μm TAC , 180 5 가
 , 1.1 , TAC ((A)
 (B) (A) 가 74μm
 , Re(A)=25nm, Rth(A)=50nm, Rth(A)/Re(A)=2 (B) 가 6μm
 , Re(B)=38nm, Rth(B)=220nm, Rth(B)/Re(B)=44

(A-1)

100μm 175 가
 1.8 88μm, Re(A)=252nm, Rth(A)=252nm, Rth(A)/Re(A)=1.0 (A)
 A) 100μm 1.5 , 95μm, Re(B)=180nm, Rth(B)=181nm, Rth(B)/Re(B)=1.0 (B) (A) 15μm
 (nx ny nz) (B)

h) A-1 A-4, 1 , (Re) (Rt)
 1

(1)

	광학이방종 A				광학이방종 B				적층위상차판			
	d(A) μm	Re(A) nm	Rth(A) nm	Rth(A)/Re(A)	d(B) μm	Re(B) nm	Rth(B) nm	Rth(B)/Re(B)	d μm	Re nm	Rth nm	Rth-Re nm
실시예 A-1	69	67	136	2.0	3	3	110	32.7	87	71	248	177
실시예 A-2	64	65	70	1.1	5	5	180	36.0	69	68	252	184
실시예 A-3	67	30	55	1.8	5	40	198	5.0	72	70	253	183
실시예 A-4	74	25	50	2.0	6	38	220	44.0	80	63	270	207
비교예 A-1	88	252	252	1.0	95	180	181	1.0	183	72	252	180

1 (B) 183μm 가 A-1 (B) A-1

2 1 , , (B) A-1

(B)

1 8 , ,

(B-1)

1 (10) 100μm

180 (A; 11a) , 2,2'- (3,4-) 2,2'- (

90μm)-4,4'- (59000))

15 % (150 ; 5) , PET (B; 11b) , PET (A; 11a) (B; 11b)

(14) , PET 110μm 15μm (11)

80μm (PVA) 5 , (13) 80

(13) 15μm (14) , (13) (A; 11a)

μm TAC (12) , (11) (13) (A; 11a)

- (13) , 240 μ m (10) .
- (B-2)
 , 2 (11) (20) , B-1 (B; 11b) , (13) 240 μ m (20) .
- (B-3)
 0 , 3 가 ((30) 1.2), 59 μ m 70 μ m (A; 11a) 16
 1 (180 ; 5), 3 μ m (B; 11b) , 62 μ m (A; 11a) , (A; 11a)
 14) , 1 (13) 80 μ m TAC 15 μ m (12) , ((31) 192 μ m (30)) .
- (B-4)
 , 4 (31) (13) (40) , B-3 (B) (13) 192 μ m (40) .
- (B-5)
 , 5 80 μ m TAC (50) , 190 5 (A; 11a) , 1.3 가
 가 (B; 11b) , 60 μ m TAC ((31) 66 μ m (13) 80 μ m TAC (12), 6 μ m 5 μ m PVA (15) 1 (A; 11a) (13) , 183 μ m (176) .
- (B-6)
 , 6 (31) (13) (60) , (B; 11b) (13) 176 μ m (60) , B-5
- (B-7)
 , 7 가 (70) TAC , 190 1.4
 (13) 5 μ m PVA (B; 11b) 80 μ m TAC (12) , (A; 11a) (13) B-1 (A; 11a) 5
 μ m PET , 15 μ m (14) , (A; 11a) , 199 μ m (70) .
- (B-8)
 2 , 8 2,2'- -4,4- (80) . 4,4'- (3,4- 65,000)-2,2-
 , 20 % 5 가 , 80 μ m TAC 1.5
 200 54 μ m TAC ((A)) , 6 μ m ((B)) , 60 μ m B-1

(A) PVA (PVA) 80μm TAC (15) (12)
 170μm

(B-1)
 80μm, Re(A) 0.9nm, Rth(A) 59nm, Rth(A)/Re(A) 66 TAC (A)
 B-1 , 130 5 (A)
 (B) 85μm, nx ny nz (A) B-1
 PVA) 80μm TAC 170nm PVA (5μm) (5μm) (

(B-2)
 B-1 , 130 5 , 160 (A)
 1.1 가 (B) 6μm, Re(B) 55nm, Rth(B) 240nm, Rth(B)/Re(B) 4.4 (A) 5μm (PVA) B-1
 B-1 (A) (15μm) , 80μm TAC

(B-3)
 80μm TAC , 190 1.4 가 , 58μm, Re(A) 40nm, Rth(A) 46nm, Rth(A)/Re(A) 1.2 (A) B-1 ,
 , 130 5 , 160 (B) 1.2 (B) 6μm, Re(B) 170 nm, Rth(B) 200nm, Rth(B)/Re(B) 1.2 (A) (B) , 15μm
 64μm, Re 가 210nm, Rth 가 246nm, Rth/Re 가 1.2, (Rth-Re) 36nm B-1
 (A) PVA (5μm) PVA , 80μm TA
 C 189μm

(B-4)
 B-1
 B-1 B-8 B-1 B-3 , (A), (B)
 2
 (2)

	광학이방층 A				광학이방층 B				적층위상차판			
	d(A) μm	Re nm	Rth nm	Rth/Re	d(B) μm	Re nm	Rth nm	Rth/Re	d μm	Re nm	Rth nm	Rth-Re nm
실시예 B-1	90	50	52	1.0	5	5	180	36.0	95	55	232	177
실시예 B-2	90	50	52	1.0	5	5	180	36.0	95	55	232	177
실시예 B-3	59	50	144	2.9	3	4	91	22.8	72	54	235	181
실시예 B-4	59	50	144	2.9	3	4	91	22.8	72	54	235	181
실시예 B-5	60	30	38	1.3	6	22	200	9.1	66	52	238	186
실시예 B-6	60	30	38	1.3	6	22	200	9.1	66	52	238	186
실시예 B-7	58	40	46	1.2	5	5	180	36.0	78	45	226	181
실시예 B-8	54	33	35	1.1	6	25	205	8.2	60	59	240	181
비교예 B-1	80	0.9	59	66	5	0.3	170	567	85	1	229	228
비교예 B-2	-	-	-	-	6	55	240	4.4	-	55	240	185
비교예 B-3	58	40	46	1.2	6	170	200	1.2	64	210	246	36

B-1 B-8, B-1 B-3 B-4
가 VA

Co () 가 10

trast 160D (ELDIM)
XYZ Y , x , y

「Y_W/Y_B」

45° -225° ,
Y (Y_W) ,
B-1

135° -315°
Ez con Y (Y_B)

가

10

3
가

3

(3)

	시야각 (°)				착색
	상하 좌우		대각	대각	
	(45-225)		(135-315)		
실시에 B-1	±80	±80	±65	±65	
실시에 B-2	±80	±80	±65	±65	
실시에 B-3	±80	±80	±60	±60	
실시에 B-4	±80	±80	±60	±60	
실시에 B-5	±80	±80	±65	±65	
실시에 B-6	±80	±80	±65	±65	
실시에 B-7	±80	±80	±60	±60	
비교예 B-1	±80	±80	±40	±40	
비교예 B-2	±80	±80	±55	±55	
비교예 B-3	±80	±80	±40	±40	
비교예 B-4	±80	±80	±35	±35	

2 가 , 가 1 , 3 (A) B-3 , (Rth-Re) 가 50nm
 , (B) B-2 , B-3 ,
 , (B) ,

가

Re 가 10nm , (Rth-Re) 가 50nm ,

(57)

1.

2

(A) , , , , , , , , , ,

(B) ,

Re=(nx-ny) · d (Re) 가 10nm ,

Rth=(nx-nz) · d (Rth) (Re) (Rth-Re) 가 50nm

X , nx, ny nz X , Y Z X , Y Z X
 , Z X Y , d , Y X

2.

1

(A) 가 , .

3.

1

n_x n_y n_z , .

4.

1

(B) $n_x(B)=n_y(B)$ $n_z(B)$,

X X , $n_x(B)$, $n_y(B)$ $n_z(B)$ (B) X , Y Z , Y , .

5.

1

(B) $n_x(B)$ $n_y(B)$ $n_z(B)$,

X X , $n_x(B)$, $n_y(B)$ $n_z(B)$ (B) X , Y Z , Y , .

6.

1

(A) $Re(A)=(n_x(A)-n_y(A)) \cdot d(A)$ $[Re(A)]$ 가 20 300nm ,
 $Rth(A)=(n_x(A)-n_z(A)) \cdot d(A)$ $[Rth(A)]$ $[Re(A)]$ [
 $Rth(A)/Re(A)]$ 가 1.0 ,

(A) $n_x(A)$, $n_y(A)$ $n_z(A)$ (A) X , Y Z , Y ,
 X X , $n_x(A)$, $n_y(A)$ $n_z(A)$ (A) X , Y Z , Y ,
 A) X , $n_x(A)$, $n_y(A)$ $n_z(A)$ (A) X , Y Z , Y ,
 , Z X Y , d(A) (

7.

5

(A) $Re(A)=(n_x(A)-n_y(A)) \cdot d(A)$ $[Re(A)]$ 가 20 300nm ,
 $Rth(A)=(n_x(A)-n_z(A)) \cdot d(A)$ $[Rth(A)]$ $[Re(A)]$ [
 $Rth(A)/Re(A)]$ 가 1.0 ,

(B) $Re(B)=(n_x(B)-n_y(B)) \cdot d(B)$ $[Re(B)]$ 가 3nm
 $Rth(B)=(n_x(B)-n_z(B)) \cdot d(B)$ $[Rth(B)]$ $[Re(B)]$
 $[Rth(B)/Re(B)]$ 가 1.0 ,
 , $n_x(A)$, $n_y(A)$ $n_z(A)$ (A) X , Y Z
 $n_x(B)$, $n_y(B)$ $n_z(B)$, (B) X , Y Z
 X X , $n_x(A)$, $n_y(A)$ $n_z(A)$ (A) X , Y Z
 , Z X Y , d(A) (A) X
 , d(B) (B) X Y , d(A) (A) X

8.

1

(A) 가 가 , .

8 9. ,

(A) , .

1 10. ,

가 , .

11. , 1 , .

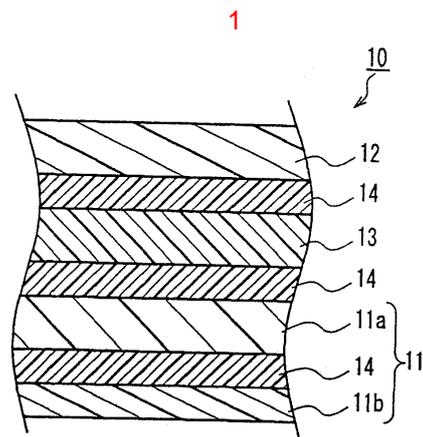
11 12. ,

가 가 , .

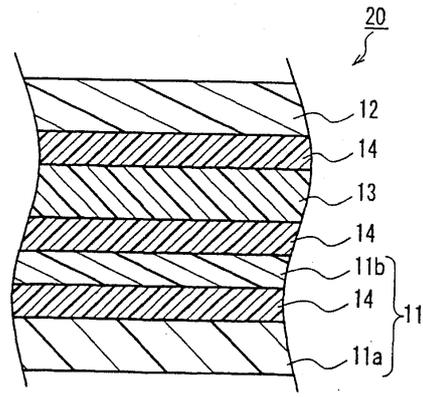
13. 가 1 , 11 가 , .

14. , 13 , .

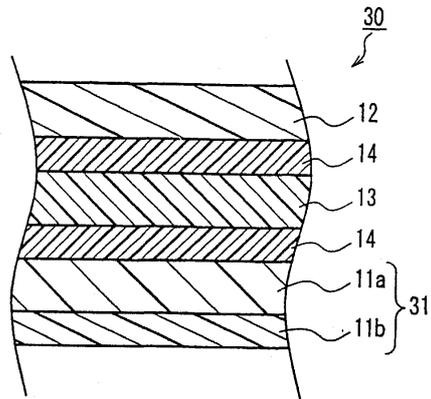
1 15. 11 , .



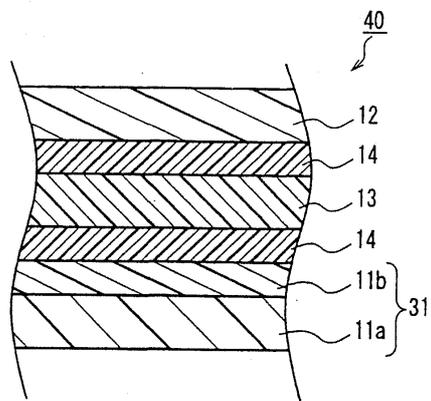
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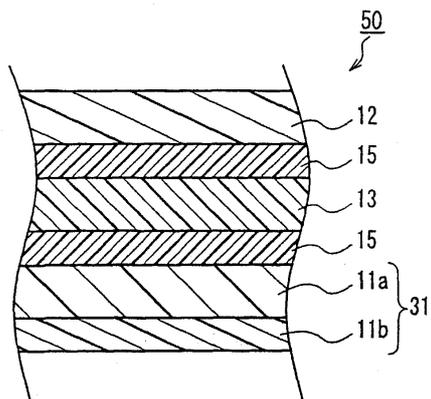
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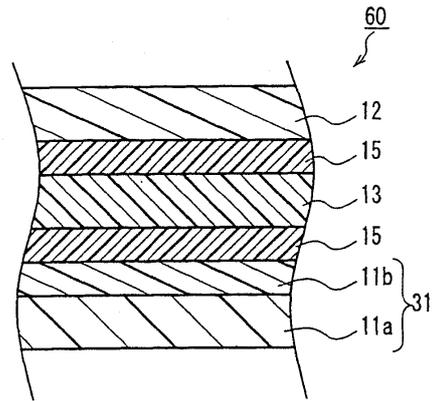
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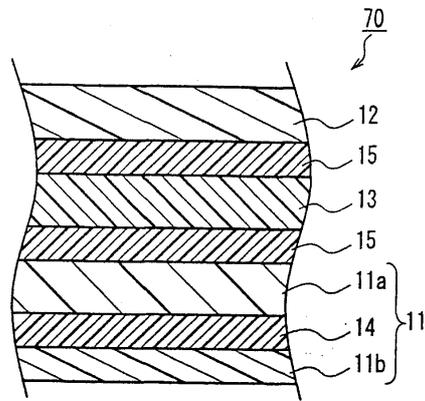
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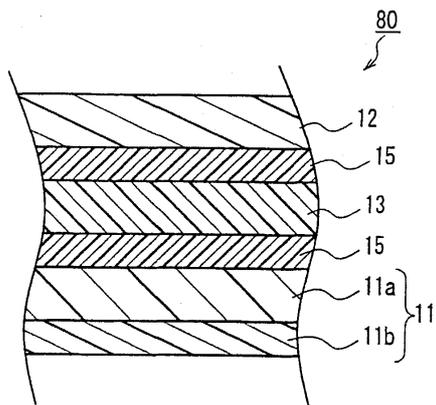
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7



8



专利名称(译)	层压延迟板，使用其的层压偏振板，以及图像显示装置		
公开(公告)号	KR1020040086403A	公开(公告)日	2004-10-08
申请号	KR1020047012845	申请日	2003-02-18
[标]申请(专利权)人(译)	日东电工株式会社		
申请(专利权)人(译)	日东电工(株)制		
当前申请(专利权)人(译)	日东电工(株)制		
[标]发明人	NISHIKOUJI YUUICHI 니시꼬우지유우이찌 SASAKI SHINICHI 사사끼신이찌 YAMAOKA TAKASHI 야마오까다까시 MURAKAMI NAO 무라까미나오 YOSHIMI HIROYUKI 요시미히로유끼 HAYASHI MASAKI 하야시마사끼		
发明人	니시꼬우지유우이찌 사사끼신이찌 야마오까다까시 무라까미나오 요시미히로유끼 하야시마사끼		
IPC分类号	G02F1/13363 G02F1/1335 G02B5/30		
CPC分类号	G02B5/3016 G02F1/133634		
代理人(译)	韩国专利公司		
优先权	2002041687 2002-02-19 JP 2002041688 2002-02-19 JP		
其他公开文献	KR100752092B1		
外部链接	Espacenet		

摘要(译)

这种层压相位延迟板对液晶显示器形成叠层相位延迟板的影响表现出优异的光学性能，即厚度方向相位差超过10nm，面内相位差为50nm或者更大。叠层相位延迟板。

