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(12) (A)

(51) 。 Int. Cl.⁷ (11) 10-2004-0071313
G02B 5/30 (43) 2004 08 11

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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

(74)
:

(54) , ,

가

.

(a) (b) , (b)

(a) , (I) (III)

$n(a) > n(b) \times 10$ (I)

$1 < (n_x - n_z) / (n_x - n_y)$ (II)

$0.0005 \leq n(a) \leq 0.5$ (III)

(I) (III) , n(a)
X . nx, ny nz
(a)
(a) (a) X , Y Z
(b) , Y
, Z X Y .

1

,
 ,
 .
 ,
 (, 3-33719),
 (3-24502).
 ,
 (4-194820),
 ,
 가
 8-511812).
 (

nx > ny > nz
Z , nx, ny, nz X , Y Z , X
X Y , Y X
 .

가 ,
 ,
 ,
 ,
 (a) (b)
(b) (a) (I) (III)

$$n(a) > n(b) \times 10 \text{ (I)}$$
$$1 < (nx - nz) / (nx - ny) \text{ (II)}$$
$$0.0005 \leq n(a) \leq 0.5 \text{ (III)}$$

The diagram illustrates the relationship between three sets of variables:

- (I)** X, Y, Z
- (II)** nx', ny', nz'
- (b)** X, Y, Z

Arrows indicate dependencies:

- (I)** depends on **(II)**.
- (II)** depends on **(b)**.
- (b)** depends on **(a)**.

$$n(a) = [(n_x + n_y) / 2] - n_z$$

$$n(b) = [(nx' + ny') / 2] - nz'$$

(I) (III)

가

$nx > ny$

(b) (a) (a) (b) (I) (III)

(a) (b)

(I) 가 . , , 가

$n(a) > n(b) \times 20$ $n(a) > n(b) \times 15$

(a) (II) 가 $1 < (nx - nz) / (nx - ny)$

$1 < (nx - nz) / (nx - ny) < 100$ 10

$1 < (nx - nz) / (nx - ny) < 80$ 가 $1 < (nx - nz) / (nx - ny) < 30$

(VA)

Figure 1. Schematic diagram of the experimental setup for the measurement of the optical properties of the polymer film. The setup includes a light source (1), a polarizer (2), a sample (3), a detector (4), and a computer (5) for data acquisition. The sample is a polymer film of thickness d and refractive index n . The incident light is polarized along the Y -axis. The reflected and transmitted light are measured at angles θ_i and θ_t respectively. The refractive index n is determined by the ratio of the transmitted and reflected intensities. The refractive index n is determined by the ratio of the transmitted and reflected intensities. The refractive index n is determined by the ratio of the transmitted and reflected intensities.

(a) (b) 1
 , 2 , 2
 , , , , ,
 , , , , ,

(a) (l) (b)
 , , , , ,

$$n_x > n_z, n_y > n_z$$

가

2
 가

(Mw) 1,000 1,000,000

2,000 500,000

2000-511296

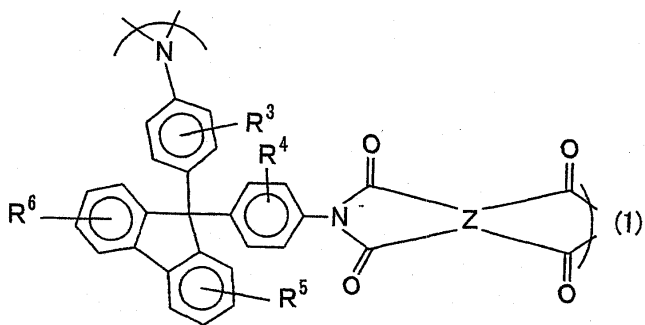
(1)

9,9-

가

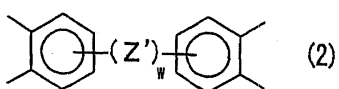
()

가



(1) , R³ R⁶ , , 1 4
 C₁₋₁₀ R⁶ , 1 4 C₁₋₁₀ 1 C₁₋₁₀ , C₁₋₁₀ R

(1) , Z C₆₋₂₀ 4 가
 (2)



(2) , Z' , C(R⁷)₂ , CO , O , S , SO₂ , Si(C₂H₅)₂ , NR
 8 , C(R⁹)₃ . R⁸ , 1 20 , C₆₋₂₀ ,
 , R⁹ , ,

4 가
, F Cl

C₁₋₁₀

8-511812

가

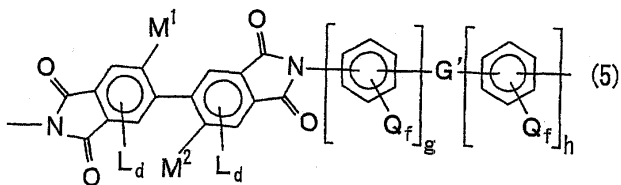
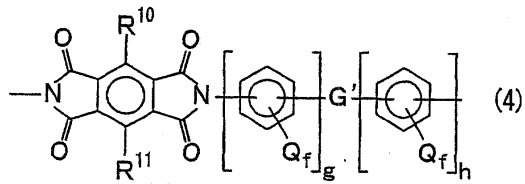
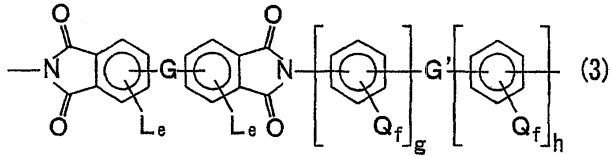
(3)

(4)

(5)

(5)

(3)



(3) (5), G G', CH₂, C(CH₃)₂, C(CF₃)₂, C(CX₃)₂ (X, CO, O, S, SO₂, Si(CH₂CH₃)₂, N(CH₃))

(3) (5), L

, d e

. L

, C₁₋₃

, C₁

3

, C₁₋₃

, C₁₋₃

1

0 2

, e 0 3

. d

(3) (5), Q

, f

. Q

, Q 가

. f 0 4

, g h

0 3

1 3

, g h 1

(4), R¹⁰ R¹¹

R¹⁰ R¹¹

(5), M¹ M²

, C₁₋₃

, C₁₋₃

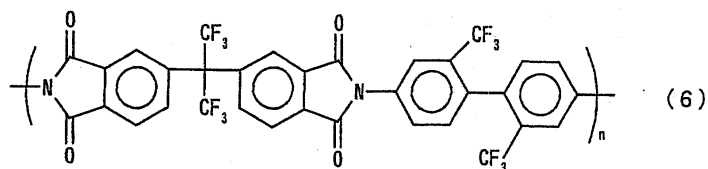
, C₁₋₃

, C₁₋₃

1

(3)

(6)



()

, 2,2'-

, 3,6- , 3,6- (, 3,6- , 3,6- 3,3',4,4'-

2,3,3',4'- , 2,2',3,3'- 2,3,6,7- , 1,2,5,6- -

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

- 2,2'- -4,4',5,5'- 2,2'- , 2,2'-

-4,4',5,5'- , 2,2'- ()-4,4',5,5'-

- , 3,3',4,4'- (2,3

-) (2,5,6- -3,4-) , 2,2- (3,4-

-1,1,1,3,3,3- , 4,4'- , 4,4'-(3,4-)-2,2-

(3,4-) , 4,4'- (3,4-)

(3,3',4,4'-), 4,4'-[4,4'- - (p-)] (

), N,N-(3,4-)-N- , (3,4-

2,2'-

, 2,2'- (2,2'- ()-4,4',5,5'- ,

2,2'- ()-4,4',5,5'-

, , ,

-2- o-, m- p- , 2,4- , 1,4- -2- , 1,4

1,3- -4-

2,2'- , 3,3'-

1,8-

2,6- , 2,4- , 2,4- -S-

4,4'- , 4,4'- , 4,4'-(9-

-4,4'- , 2,2'- () , 2,2'- (4-

2,2'- (4-)-1,1,1,3,3,3- , 4,4'- , 3,4'-

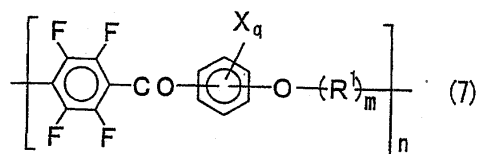
, 1,3- (3-) , 1,3- (4-) , 1,4- (4-

, 4,4'- (4-) , 4,4'- (3-) , 2,2'- [4-(4-)]

, 2,2'- [4-(4-)]-1,1,1,3,3,3- , 4,4'- , 4,4'-

(a)
(7)

2001-49110



(7) , X , q

. X

, X 가

가

C_{1 4}, sec-

, tert-

가

C_{1 6}

가

C_{1 4}

, sec-

tert-

가

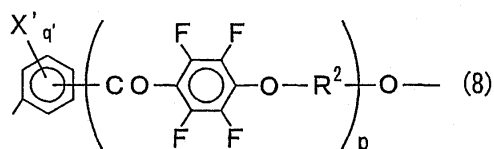
(7) , q 0 4 가

(7) q = 0

(7) , R¹

(8)

, m 0 1



(8) , X'

(7) X

(8) , X' 가

, 0 4

, q' = 0

. p 0 1

(8) , R² 2 가

2 가

o-, m-

p-

2 가

, o-, m-

p- 2 가

R²

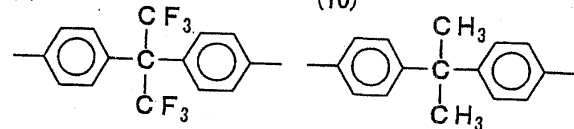
(9)

(15)

가

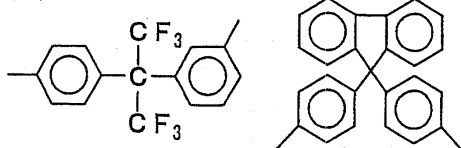
(9)

(10)



(11)

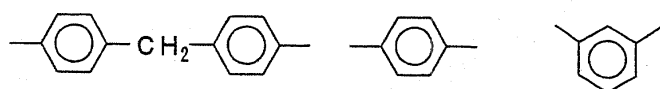
(12)



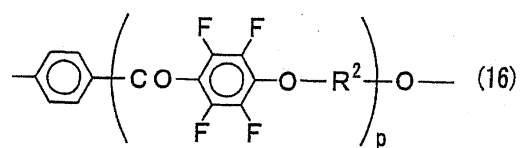
(13)

(14)

(15)

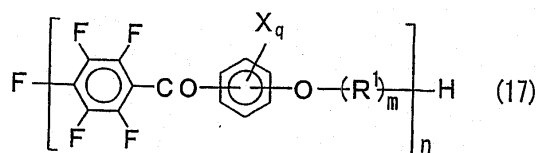


(8) (7) , R¹ (16) 가 , (16) , R² p

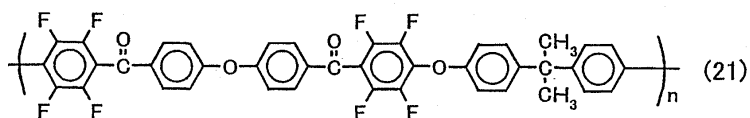
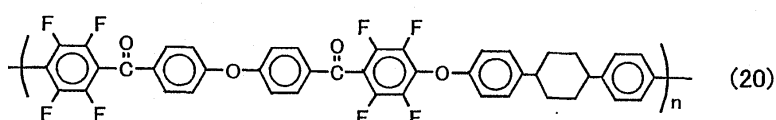
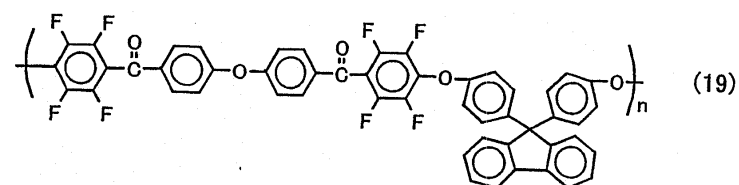
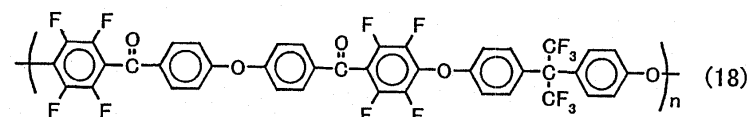


, (7) , n , 2 5000 , 5 500 . ,

, (7) p- (17) , , n (7) .



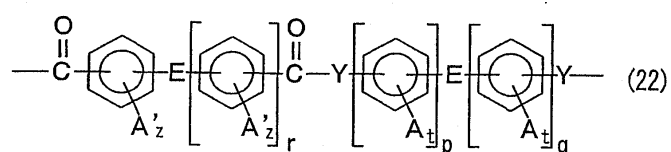
(7) , n (7) (18) (21) ,



(a)

10-508048

22)

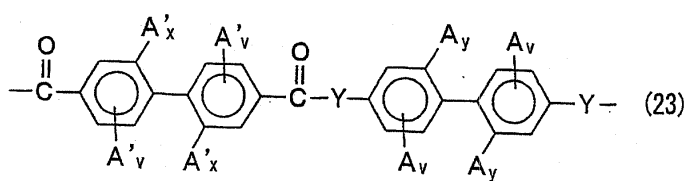


(22) , Y O NH . E , C(CX₃)₂ (, X .), CO , O , C₂ , S , SO₂ , Si(R)₂ , CH₂ , N(R)

1 3 1 1 , Y . E R C 1 3 C
 , (22) , A A' , t z
 , q 1 3 , r 0 3 . , p 0 3
 A , , C 1 3 , C 1 3 , OR (, R .)
 , C 1 12 , C 1 12 , C 1 9 , C 1 9
 C 1 12 , C 1 12 , C 1 12 ,
 A' , C 1 3 , C 1 3 ,
 1 3 3 , C 1 3 . t 0 4 , z 0

(22)

(23)



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

(b)

(I)

가 , 가
 가 . (TAC) , ,

2001-343529 (WO 01/37007)

가

N-

가

가

가

(I) (III)
 1 2

1

(b)

(a)

b)

(b)

(a)

(a)

(I) (III)

가

가

$n_x = n_y > n_z$

$> n_z$)

($n_x > n_y$

(1)

Figure 1 illustrates the synthesis of polyimides. Part (a) shows the reaction of diamines (H₂N-R-NH₂) with dianhydrides (HOOC-R'-COOH) to form polyimides. Part (b) shows the synthesis of polyimides from diamines and dianhydrides, with specific examples of polyimides (PI, PBT, PPS, PCT, PAR, PES, PK, LCP) and their corresponding chemical structures.

Chemical structures shown include:

- Diamines: H₂N-R-NH₂
- Dianhydrides: HOOC-R'-COOH
- Polyimides: -[NH-R-NH-CO-R'-CO]_n-
- Specific polyimides: PI, PBT, PPS, PCT, PAR, PES, PK, LCP

가 (a) 가 25 300 , 50 200 , 60 180 , 가 2% , (a) 가 0.2% , 5% 가 , 2 , (a) (b) (a) 가 (a) 1 (b) 1 가 1 nx = ny > nz , (nx > ny > nz) , 1 1 3 5 가 1 4 , 2 (l) (a) 가 1 2 (a) (b) (b) 가 가

2 3
(2) (20) (1), (2) 2 (3) (1)
(3) (1) (a) (b) 가 (1)

3 (30) (1), (2) (3)
(2) (1) (3) (1) (a) (b) (b) (2)
(1) (1) (b)

2 2
(PVA) 가 PVA 2
PVA 1 80 μ m PVA

TAC

2001-343529 (WO01/37007)

가 N-

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

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

가

가

「WV」

2

500 μ m

5

300 μ m,

5

150 μ m

가

가

0

2

70

가

5

50

0.5

20 μ m

10

()

(, ,)

가

가 PVA

PVA

가

가

10nm

300nm

20nm

100nm

1nm

가
500nm

가

PVA

가
가

가

가

가 , PVA 가 . PVA
, Z
) 1/4 (/4
, 1, 2 가 , 2
, 1, 2 가
, 가 가
() 가
) ()
, 가
()
, 가

3M 「D-BEF」
「PCF350」, Merck 「Transmax」
가 2
2
가
가
1
1 500 μ m
가 ,가
()
VA (;
Vertical Aligned) , VA

,
 ,
 ,
 ,
 1 2
 ,
 ,
 4 (1), (2) (3) (21) (40) (21)
 , (1) (2) (3) (21) (1)
 , (2) (1) 2 (a)
 (b) ()
 () 가 , ,
 ,
 (EL) , PDP, FED
 nd /4 ,
 , (EL) EL EL EL
 , EL /4 EL , ,
 , EL
 (EL EL)
 ,
 , EL 가 가 가
 , 가
 , EL (ITO) 가 Mg-Ag,
 Al-Li
 EL , 10nm 가
 , EL

EL

()

EL

EL

/4

EL

가

EL

가

가

()

1/4

/4

EL

1/4

/4

가

1
2
3
4

가

(nd,)

(KOBRA21ADH)

()

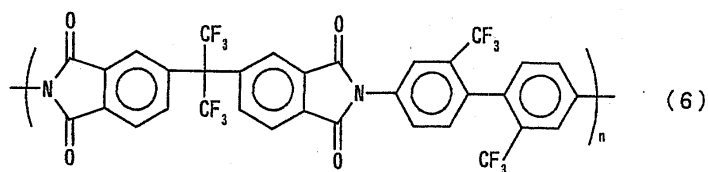
KOBRA21ADH 590nm

()

K-351C

(1)

2,2-(3,4-(TFMB)) (6FMDA) , 2,2'-()-4,4'-
(1999) 4571-4583) 15 % (Mw) 70,000 (F. Li , Polymer 40
175 1.3 75μm 80μm (TAC) TAC
100 10 6μm, n(a) 0.04 75μm,
n(b) 0.0006 TAC ((b)) nx > ny > nz n(a) ()



(2)

(18)

(Mw: 500,000)

1

TAC

75 μ m,

n(b)

0.0006

TAC

100

, 20 %

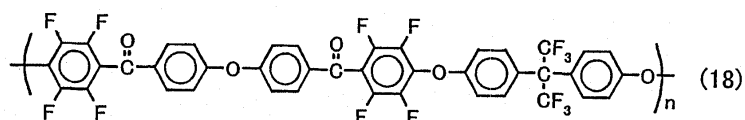
10

(b)) , 10 μ m,

nx > ny > n

n(a) 0.02

z



(3)

4,4'- (3,4-
(Mw: 30,000)
TAC

)-2,2-

20 %

2,2'-

-4,4'-

80 μ m

, 130

5

80 μ m,

n(b)

, 150

0.0006

TAC

(

10%

(b))

, 5

nx > ny >

n(a) 0.025

z

(4)

2,2'- (3,4-
(Mw: 100,000)
TAC80 μ m

, 130

2,2'- ()-4,4'-
15 %

10%

6 μ m, n(a) 0.04

(

5

80 μ m,

n(b)

, 150

0.0006

TAC

(

(b

nx > ny > nz

(5)

N-

28 %

(N-

25

50 %)

75

15 %

60

PET

, 140

10

7

160

30

(b)

nd = (nx - ny) • d 1nm,

Rth = (nx - nz) • d 4nm

(b)

,

1

, 130

10%

(b))

,

6 μ m,

n(a)

0.035

(

, 100
50 μ m,

n(b)

5

0.0001

(a))

nx > ny > nz

(6)

1

1

TAC

75 μ m,

n(b)

0.0006

TAC

, 160

25 %

5

(b))

,

6 μ m,

n(a)

0.04

((a)) . nx > ny > nz

(7)

1 80μm TAC , 100 10
a) 0.025 , (80μm, n(b) 0.0006 TAC ((b)) , 4μm, n()
(a)) nx ny > nz

(1)

n 0.002 (JSR , ARTON) 175
1.3 80μm 가 , nx > ny > nz

(2)

1 , 100 10
nx ny > nz , 7μm, n 0.04

(3)

75μm (PET) 175 1.3
75μm PET , PET 1 75μm, n(b) 0.08 PET
((b)) , 6μm, n(a) 0.04 ((a))
nx > ny > nz

(4)

3 3 PET , 150 5
0.035 (75μm, n(b) 0.08 PET ((b)) , 10μm, n(a)
(a)) nx > ny > nz

nd = (nx - ny) × d, Rth = (nx - nz) × d, Nz
= (nx - nz) / (nx - ny),
5 (b) TAC , 5
1

[1]

	n(b)	n(a)	nd (nm)	Rth (nm)	Nz	(μm)	
1	0.0006	0.045	135	270	2.0	6	- 0.5 + 0.5
2	0.0006	0.020	10	200	20	10	- 0.5 + 0.5
3	0.0006	0.025	50	125	2.5	5	- 0.5 + 0.5
4	0.0006	0.039	100	235	2.4	6	- 0.5 + 0.5
5	0.001	0.035	80	210	2.6	6	- 0.5 + 0.5
6	0.0006	0.038	70	230	3.3	6	- 0.5 + 0.5
7	0.0006	0.025	0.9	100	111.1	4	-
1	-	0.002	91	182	2.0	80	- 2.5 + 2.5

2	-	0.043	0.3	298	993.3	7	-	
3	0.08	0.042	50	250	5.0	6	- 0.5	+ 0.5
4	0.08	0.035	44	370	8.0	10	- 0.5	+ 0.5

1 1 4 (I) , (I), (II) (III) ,
(가)

「HEG1425DU」 1 7 1 4 (() ,

(b) 가 ,

(斜視)가 가 ,
(II) 가 100 1 6

(I) (III) ,

가

(I) (III) $n_x > n_y > n_z$
가 가

(57)

1.

(a) (b) (b) (a) ,
(I) (III) :

$$n(a) > n(b) \times 10 \text{ (I)}$$

$$1 < (n_x - n_z) / (n_x - n_y) \text{ (II)}$$

$$0.0005 \quad n(a) \quad 0.5 \text{ (III)}$$

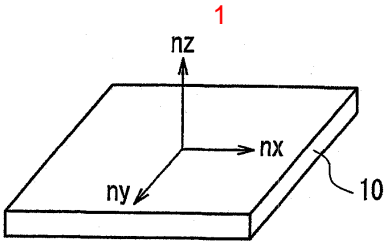
[(I) (III) , n(a) (a) , n(b) (b)
(II) , n_x, n_y , n_z (a) X , Y (a)
, n_x', n_y' n_z' (b) X , Y
, Y X , Z X Y

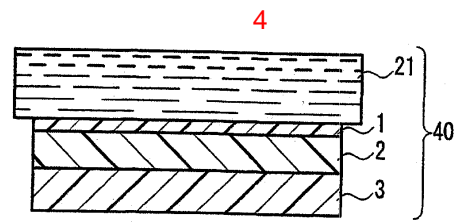
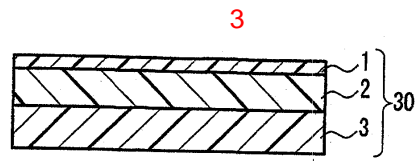
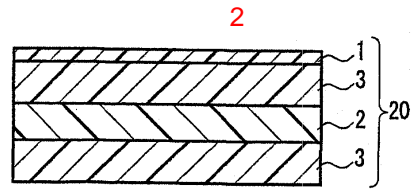
$$n(a) = [(n_x + n_y) / 2] - n_z$$

$$n(b) = [(n_x' + n_y') / 2] - n_z'.$$

2.

- 1, (b), (a).
- 3.
- 1, (a) 가 .
- 4.
- 3, 가, 1, .
- 5.
- 1, (b), (a).
- 6.
- 5, 가 (b) .
- 7.
- 1, (b), (a) .
- 8.
- 1, 가 .
- 9.
- 8, .
- 10.
- , 1 .
- 11.
- 가 1, 10 가 .
- 12.
- , 11 .
- 13.
- 1 10 .





专利名称(译)	光学膜，层压偏振片，使用其的液晶显示装置和自发光显示装置		
公开(公告)号	KR1020040071313A	公开(公告)日	2004-08-11
申请号	KR1020047010862	申请日	2003-01-22
[标]申请(专利权)人(译)	日东电工株式会社		
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摘要(译)

透明光学膜本发明涉及一种具有优异光学性能的透明光学膜，它可以防止彩虹斑的出现并显示出均匀的相位差分布。包括光学薄膜的光学薄膜是双折射层 (a) 和所述透明膜 (B) 本发明的，双折射层 (a) 在 (b) 中的透明膜被层压，并且下述式 (I) ~ (III)。
(I) 至 (III)，其中n是满足下式 (I) 的整数： $n(a) > (A)$ 是双折射层 (a) 的双折射率， $\Delta N(b)$ 是透明膜 (b) 的双折射率。其中nx, ny和nz分别表示X轴，Y轴和Z轴方向的双折射层 (a) 的折射率，X轴是在双折射层 (a) 和所述透明膜的面 (b) 中Y轴是在平面内垂直于X轴的轴向，Z轴表示垂直于X轴和Y轴的厚度方向。1

