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10-2004-0069493
2004 08 06

(21) 10-2003-0005911
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(71) 416

(72) 302 2001

133 1101

255-1601

2 220-1201

3 1 2606

(74)

:

(54) -

가 1 2 1 2
1 2 1 2
2 2 2 1 1 2
가 .
3

1a - , 1b VT
 .
 2a - , 2b VT
 .
 3 - ,
 .
 4 3
 .
 5a 5e ,
 5e .
 6 ,
 .
 7a , 7b
 .
 8a , 8b
 .
 9a 9d , 9e 9h
 9a 9d .
 10a 10d , 10e 10h
 10a 10d .
 11 -
 .
 12a , 12b VT
 .
 13a , 13b VT
 .
 14 -
 .

< >
 11, 21, 110 : 1 12, 120 : 1 /2
 13 : 1 /4 14, 23, 130 :
 15, 24, 140 : 16, 25, 150 :
 17 : 2 /4 18, 160 : 2 /2
 19, 27, 170 : 2

(Reflection type LCD)

가

(Penetration type LCD)

가

(Reflection and Penetration type LCD)

1a

1b

1a VT

()

1a

(10)

1 (11), 1 /2 (12), 1 /4 (13), (14), (15), (16), 2 /4 (17), 2 /2 (18) 2 (19)

1 2 /2 (13, 17)

(12, 18)

), 1 /4 (13), (15), (16), 2 /4 (17), (11), 1 /2 (18) (12 2 (19))

(15) (17), 2 /2 (19), 2 /2 (18), 2 /4 (17), (16) (14) (15), (16), 2 /4 (18) 2 (19)

1b (15) 가 (Normally White Mode) 가 가

VT

1a 2 4

가 2

2a

2b

2a VT

2a 1 (21), 1 (22), (23), (20) (24), (25), 2 (26) 2 (27) (21), 1 (22), 7)

(24), (25), 2 (26) 2 (27) 1 (21), 1 (22),

(23) 2 (27), 2 (26), (25) (24) (24), (25), 2 (26) 2 (27)

1/2 (120) (110)

1/2 (120) 13 (110) (130) (140) 1

(110) (140) 1/2 220 300[nm] 1/2 (120) /2

가 1 가 2

(Retardation) 1 2 1 2

가 () Re() Re()/

(130) TFT 가 () (140)

TFT () (140) (130)

1 (110) 1/2 (120), 1 (110) 1 (110)

(140) 75 (slow axis) 1/2 (120) (13

0) (150) (140) (140) (130)가 /4

300[nm] /2 120 /2 150[nm] /2 220

(140) 가 가 가

(splay) 1 (K11)가 8.9, (twist) 2 (K22)

가 5.1, (bend) 3 (K33)가 13.5, () 4.5, (pitch)가 12

4.0, (pretilt angle)[deg] 5.0 ()

1, 1 (Cauchy fo

rmular)

$$n(\lambda) = n_{\infty} + A/\lambda^2$$

[1]

		n	A(nm ⁻²)
zsm5342	n _e		
	n _o		

/2	n _e	1.55817	11296
	n _o	1.55464	11110

, n_e , n_o .
 , (150) , (140) 2 /2 (160) , RGB
 .
 2 /2 (150) (160) 16 , (150) 2 (170) ,
 (150) 2 (170) , 2 (170) ,
 /2 , (150) /2 220 300[nm] 2 /2 (160) .
 2 (170) 0 , , 2 /2 (16
 0) 가 , ,
 , , 2
 (170) 2 /2 (160) . , 2
 , 2 (170) 2 /2 (160)
 .
 , 가 - 가 , ,
 가 가 , ,
 ± 15 , nd (, n , d) ± 30nm
 .
 , - ,
 , ,
 , 2 (170) 0
 , 2 /2 (160) 30 (170) 30
 (150) (140) (140) (130) 가 ,
 (130) (140) 120 (160) 90 12
 0 , 2 (170) (150) 2 /2 가 .
 , , 2 (170) 0
 , 2 /2 (160) 30 30
 (150) (140) 30 (13
 0) 가 , (130) 30 (140) 30
 (150) 2 /2 (160) 0 30
 2 (170) 가 .
 , , 2 (170) 0
 , 2 /2 (160) 30 30
 (150) (140) 30
 (130) 가 , (130) 30 30
 (140) 120 , 30 120
 , 30 (150) 2 /2
 (160) 90 , 0 90 2 (170)
) 가 , 2 (170) 0 90 2 (170)
 가 .

, 0 , , 1 /2 , 1 (110) 가 1 (110)
 (140) 가 120 (120) 30
 (150) 2 (170) (160) 가 120
 90 2 가 90
 ,
 110) 0 , , 1 /2 , 1 (110) 가 1 (110)
 (140) 가 30 (120) 30
 (150) 2 (170) (160) 가 30
 0 2 가 0
 ,
 40) 가 120 30 (110) 가 1 (110) 0
 (150) 2 (170) 가 2 /2 (160) 가 30 90 0
 2 (170) 가 2 (170) 가 0 90
 가
 (130)가 (130)가
 ()

< >

5a 5d , , 6 ,
 5e , ,
 (Poincare sphere) 3 1

2 (170) 0 2 /2 (160) , 5a , 7
 , 400[nm] , 550[nm]

2 /2 (160) /4 (140) , 5b
 (140) 400[nm] , 550[nm] 700[nm]

(140) (130) /4 (140)
 , 550[nm] 5c , 700[nm] , 400[nm]

2 /2 가 (160) 5d 90
 , 2 1 2 , 4 , 6

7a , 7b ,
 8a , 8b

7a , 400[nm] , 550[nm]
 , 700[nm]

, /2 45 , 15

7b 8b , .

9a 9d , 9e 9h
9a 9d , 10a 10d , 10e 10h 10a 10a 10d

10a 10d 가 가

9a 9d ,

< >

, 2 (170), 2 /2 (160), (150) (140)
(130) 2 (170) (130) (140), (150), 2 /2

140), (150), 2 /2 11 1 (110), 1 /2 (120), (
(160) 2 (170)

/2 11 가 , (140) 1 (110) 1
(120) 2 가 /2 (120, 160) zsm5342
(140) 3 4

, 1 4
2 2

12a 12b VT ,
13a , 13b VT

12a 12b , 90 ,
가 , (CR) 1000 .
, ECB 12b 가 가
가 가
CR 가
13a

13b CR 120 CR , ,

가

14

14

가 4

3

가

VT

VT

가

가

2

1b

2

2

4

가 가

1

가

가

(57)

1.

/2

/4

가

1

1

;

/2

1

;

1

/2

1

/2

2

/2

;

2 /2

2

2

2.

1 , 가

3. , ± 15 , nd $\pm 30\text{nm}$

4. , /2 200 300nm , /4 120 150nm

5. , 1 1 ;

1 2 , 2 2 ;

1 2 ;

1 , 1 2 , 2 ,

2 2 - .

6. , 1 1 1 ;

2 2 2 2

- .

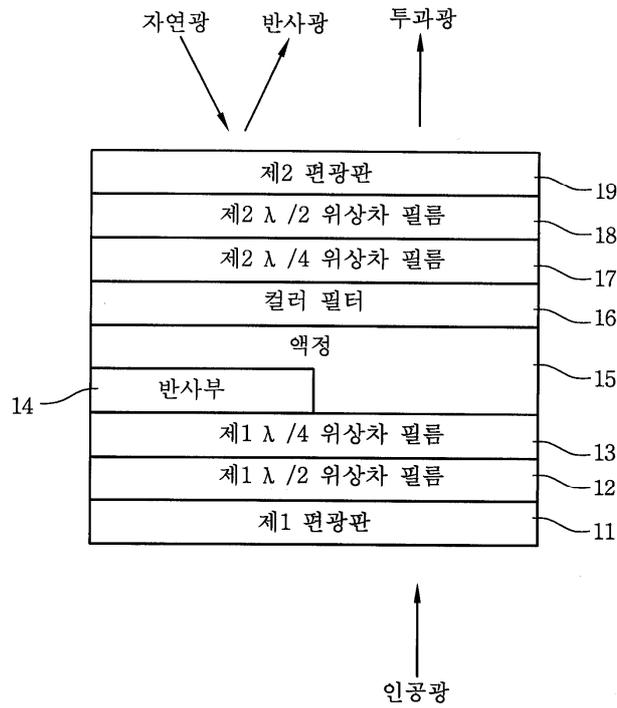
7. , 1 1 가 1 , , 2
2 2 가 1 2 , , , 2 , 2 2
2 가 2 , , , 2 , 2 2

8. , 1 /2 , 2 /2

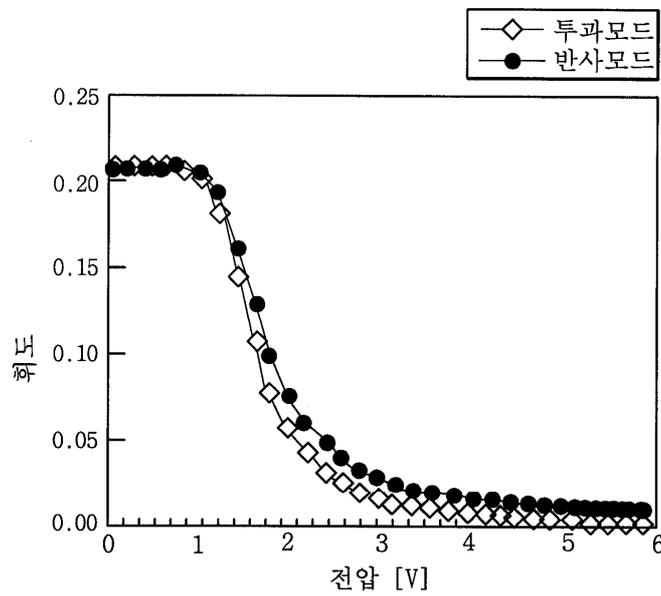
9. , -

1a

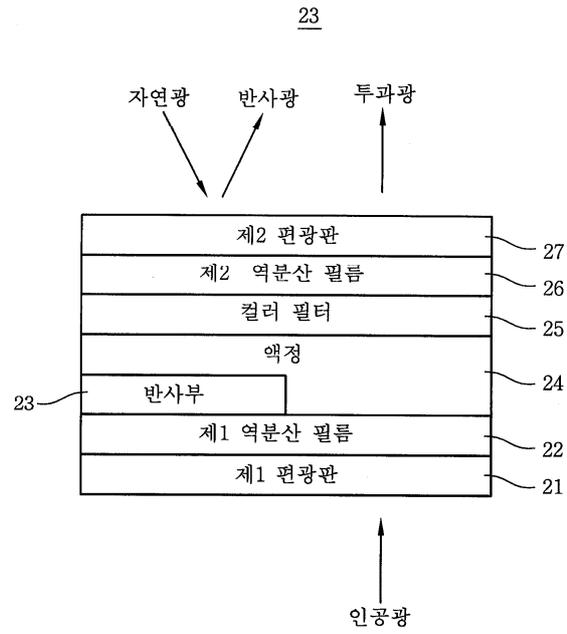
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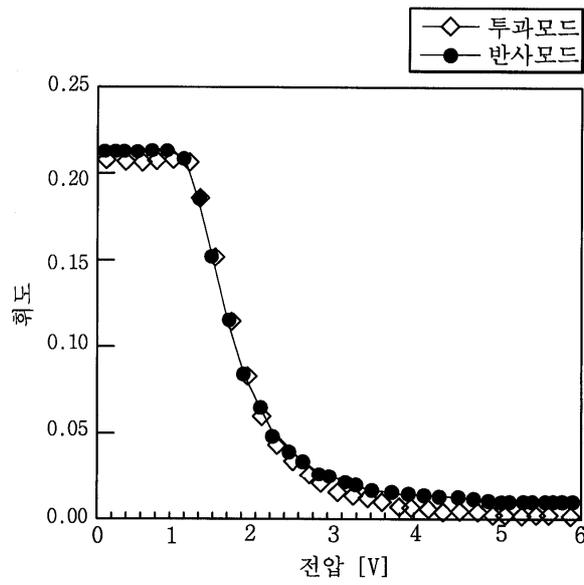
1b

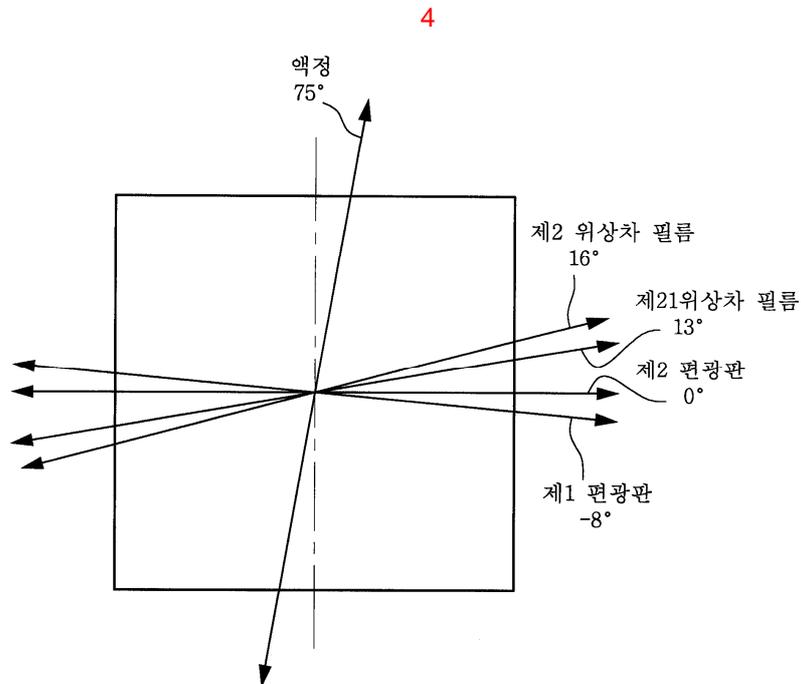
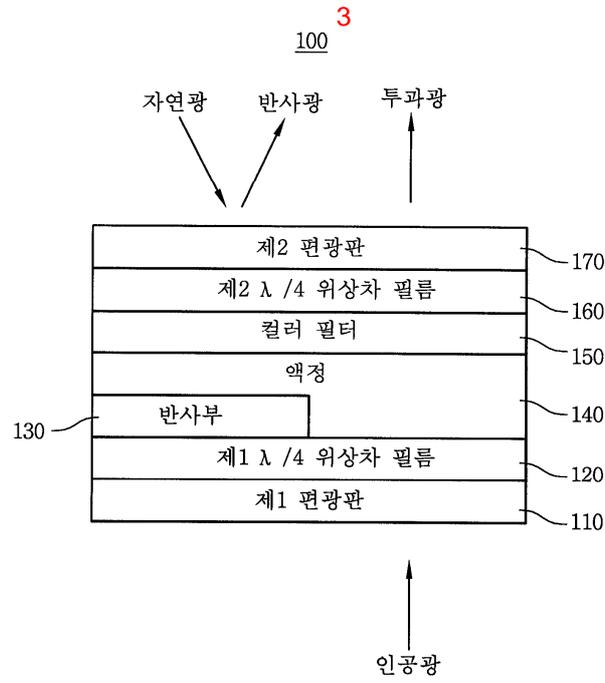


2a

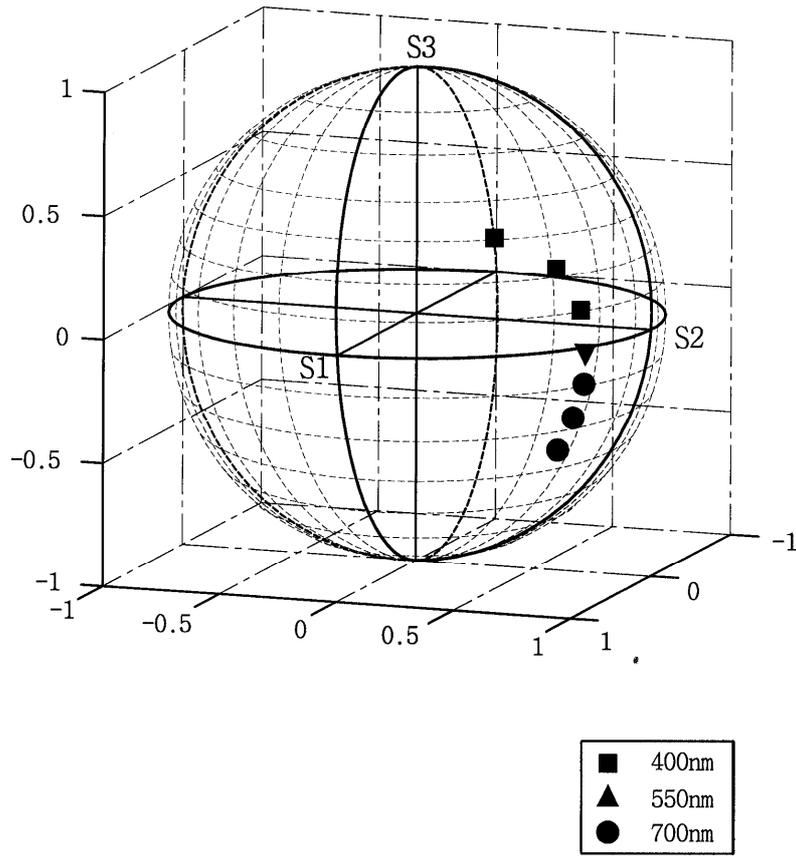


2b

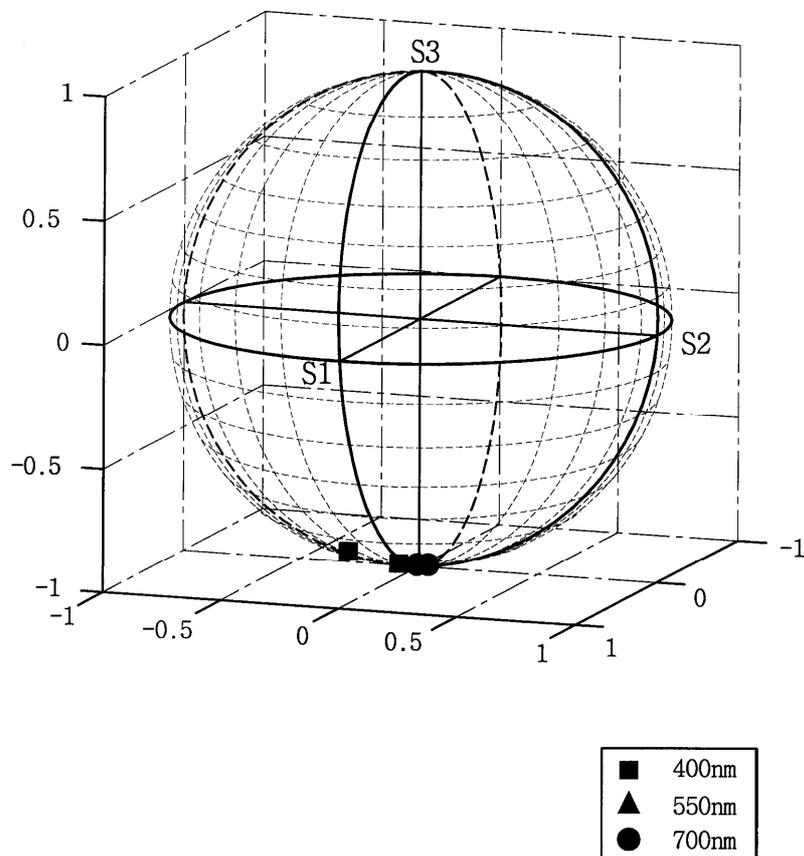




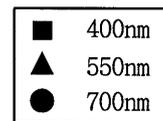
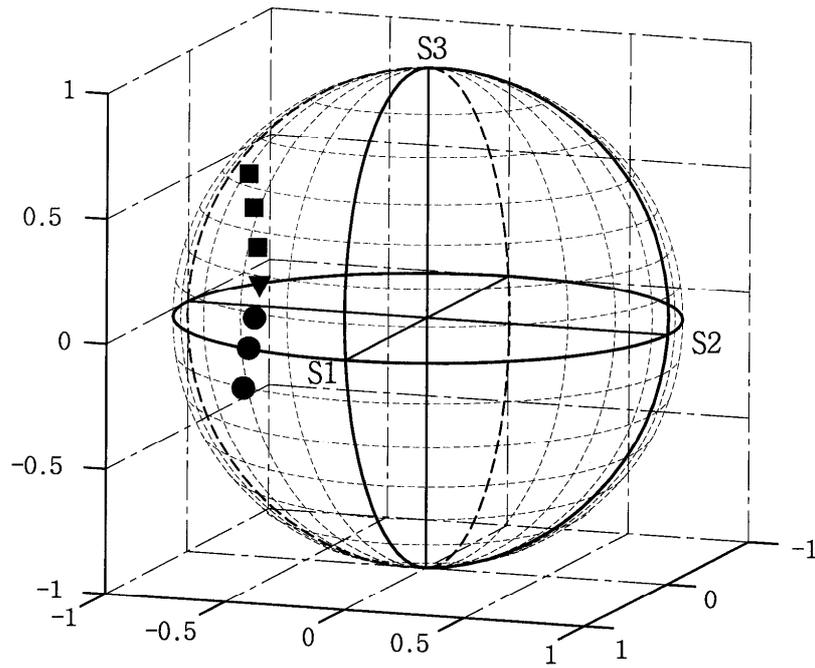
5a



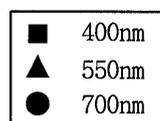
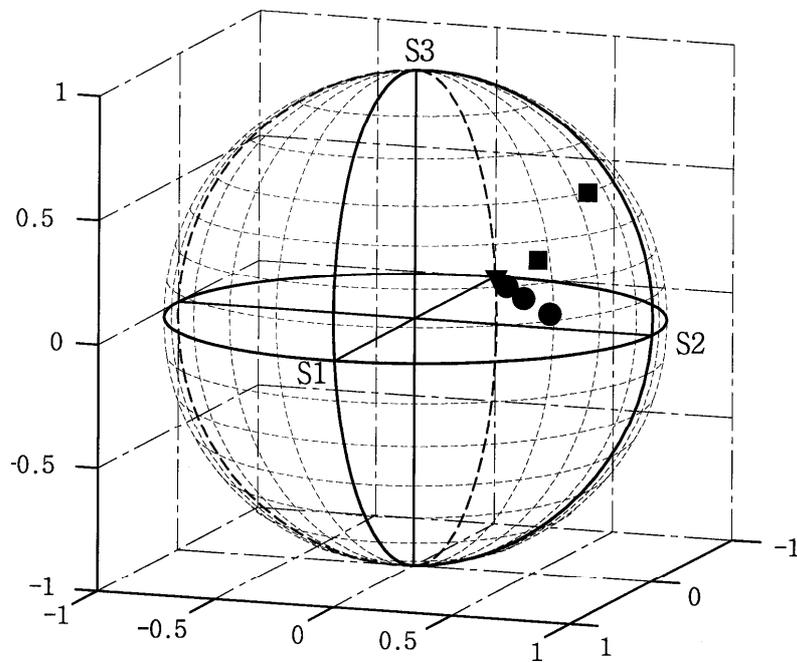
5b



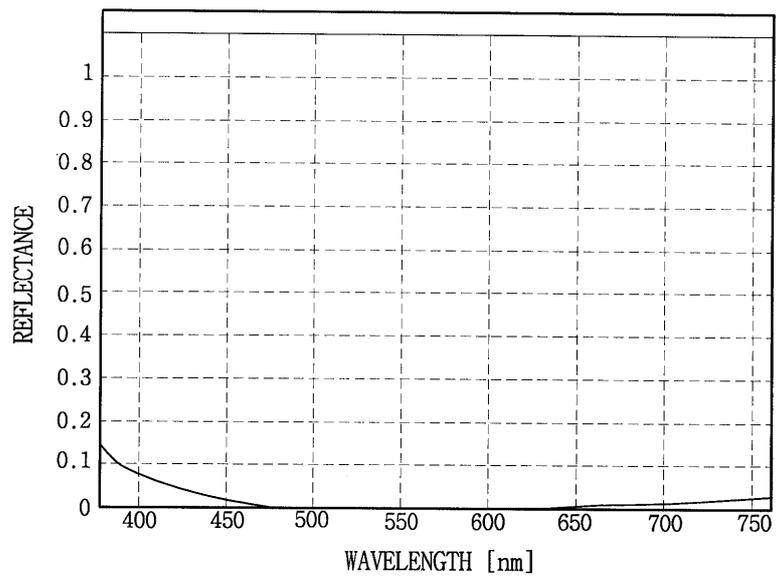
5c



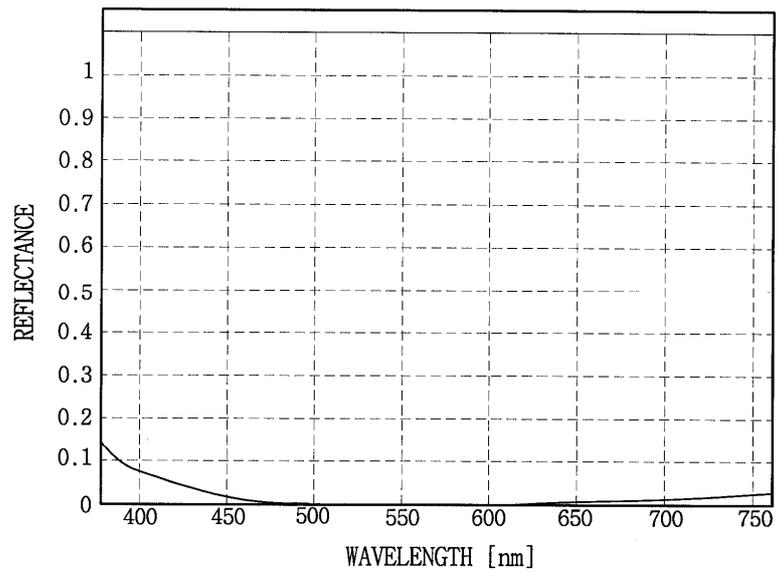
5d



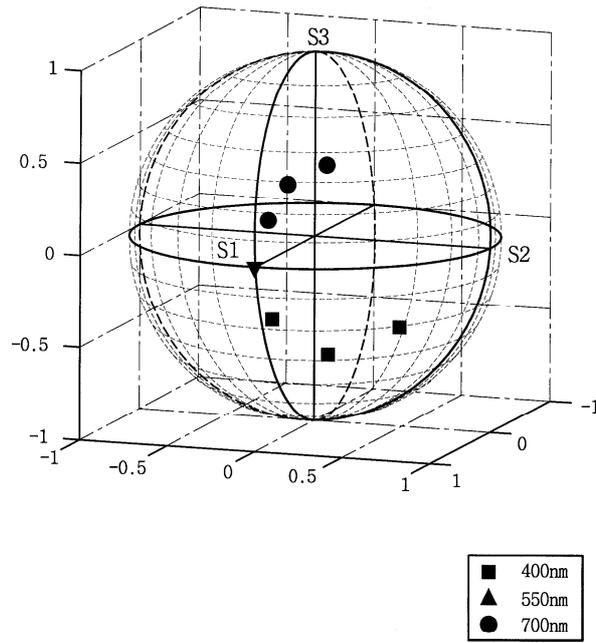
5e



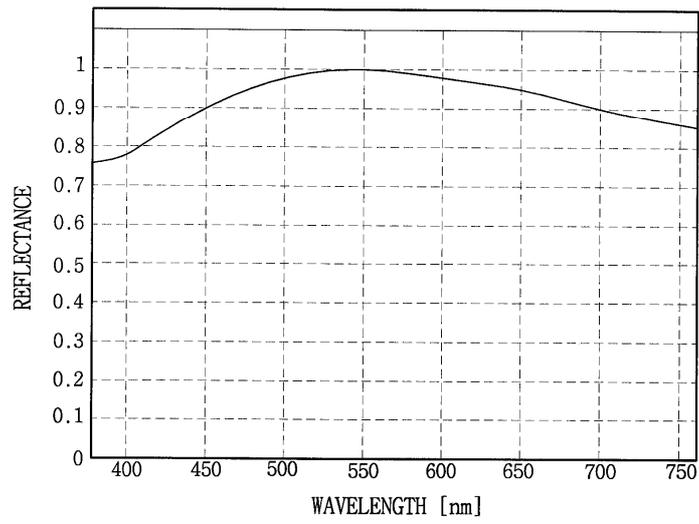
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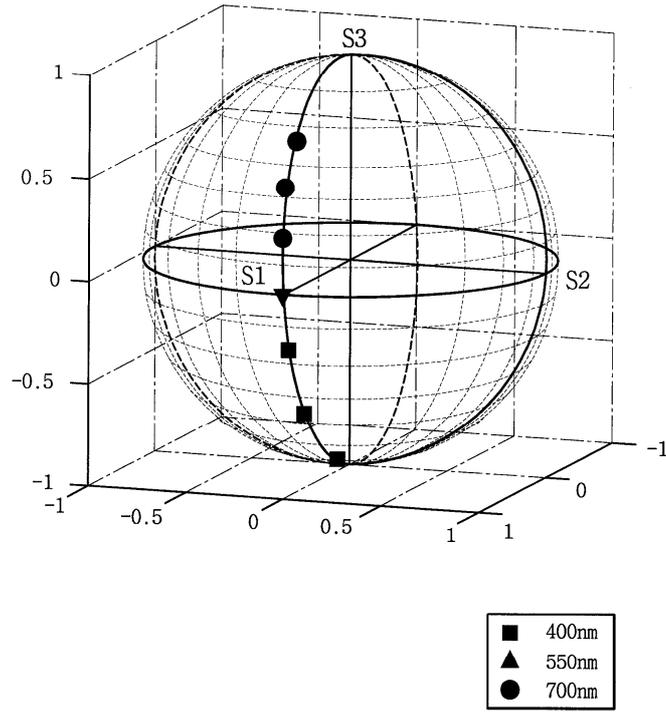
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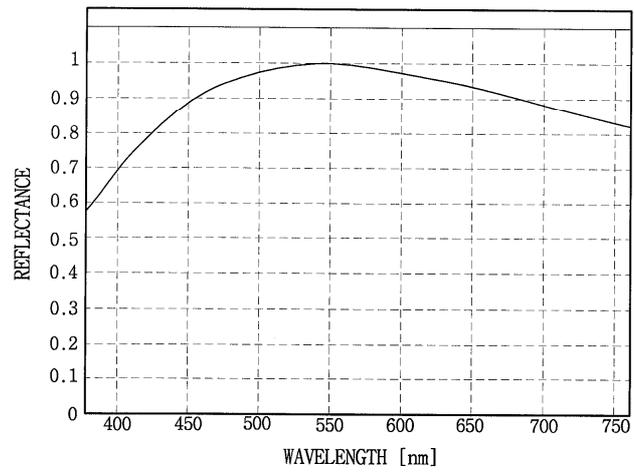
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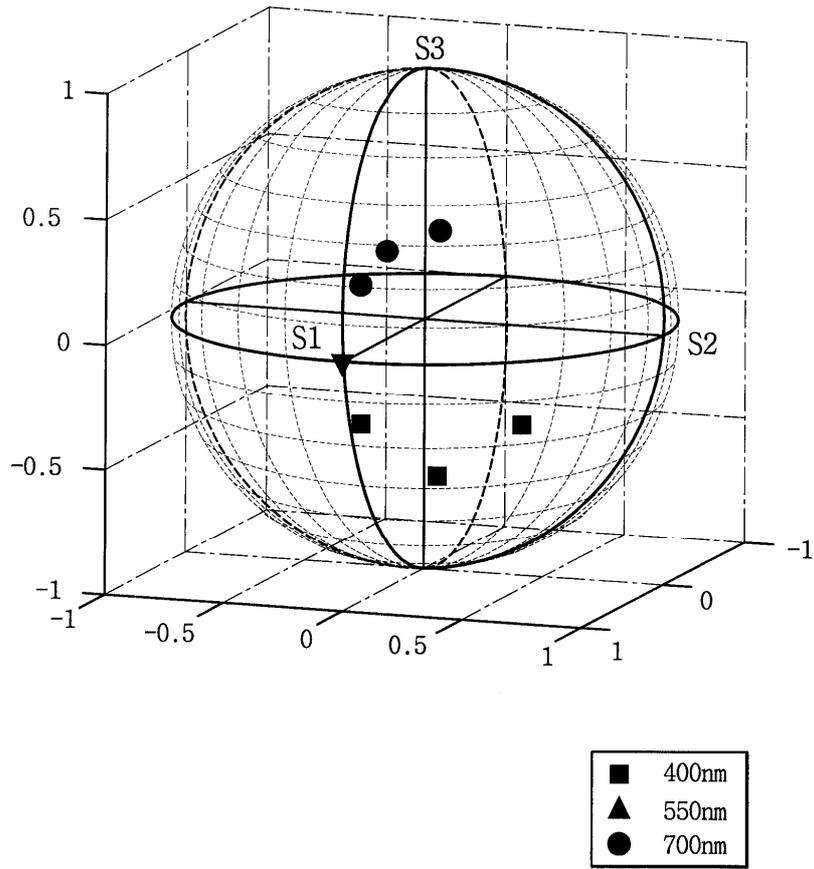
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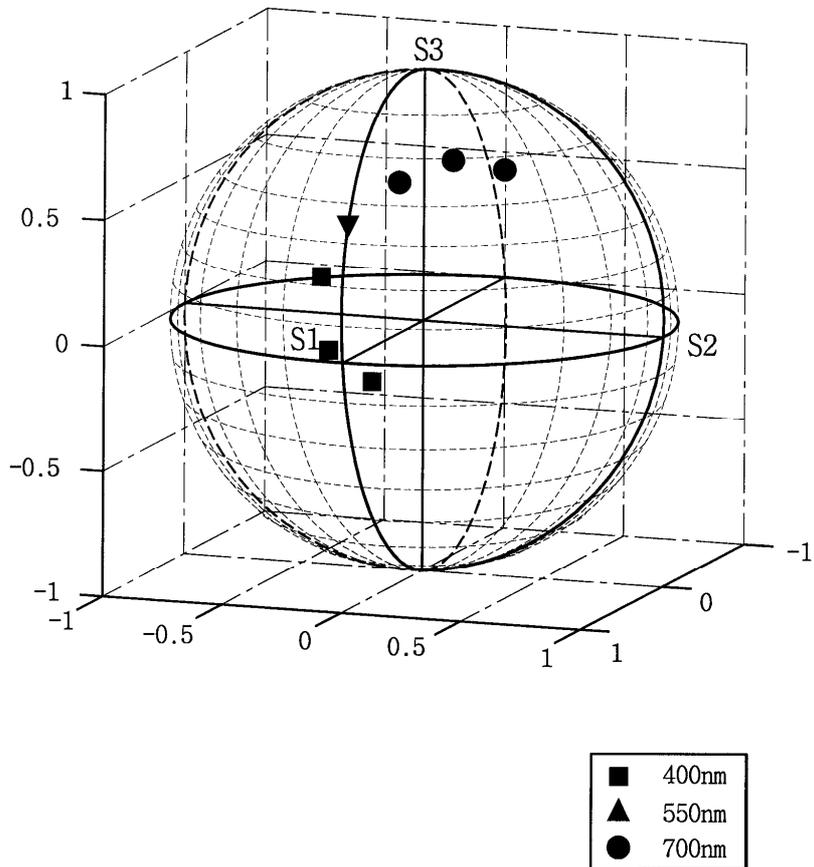
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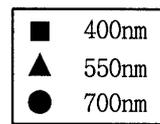
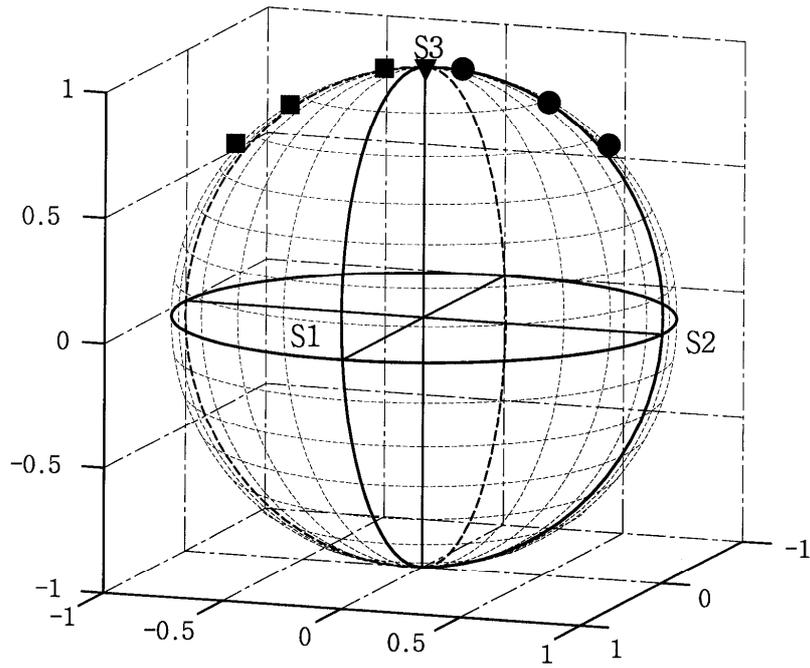
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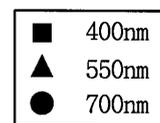
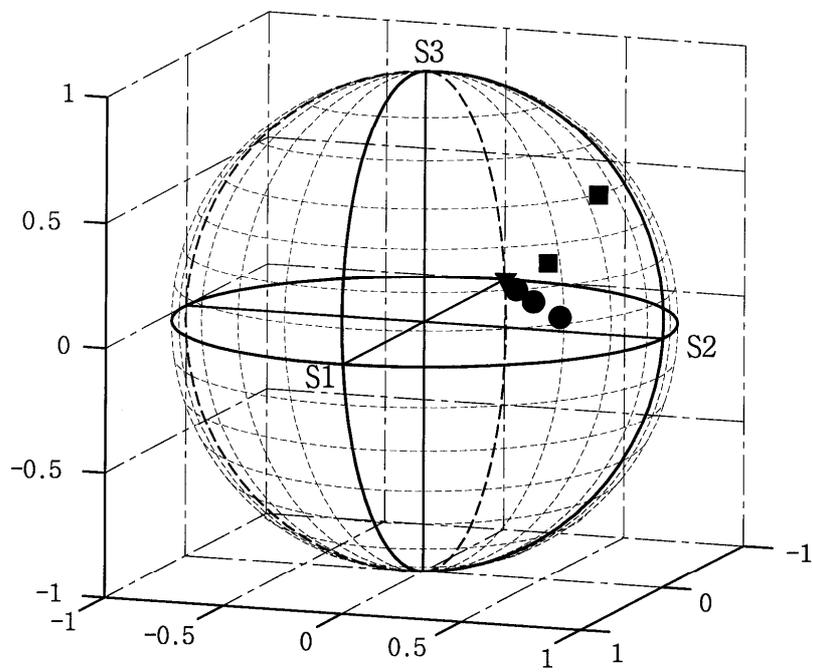
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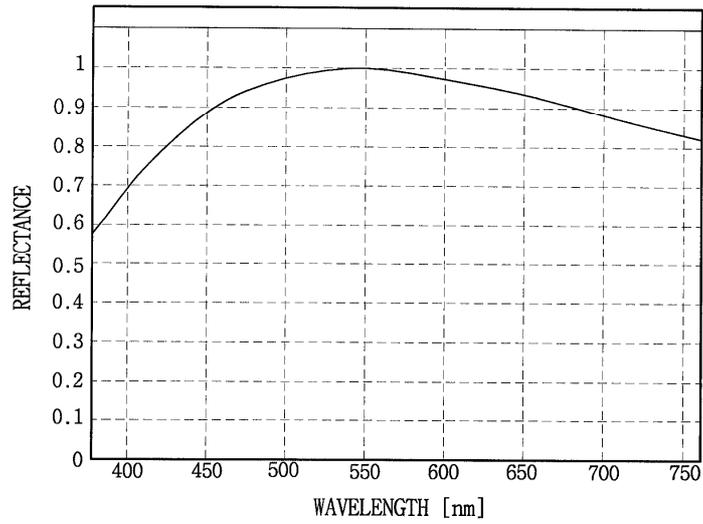
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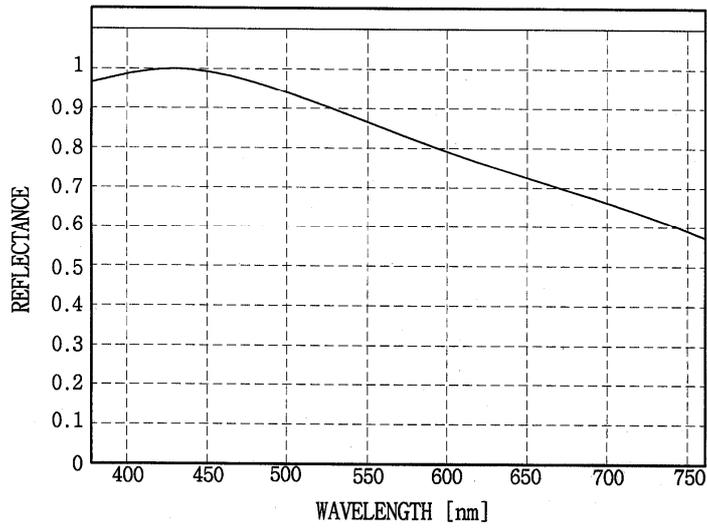
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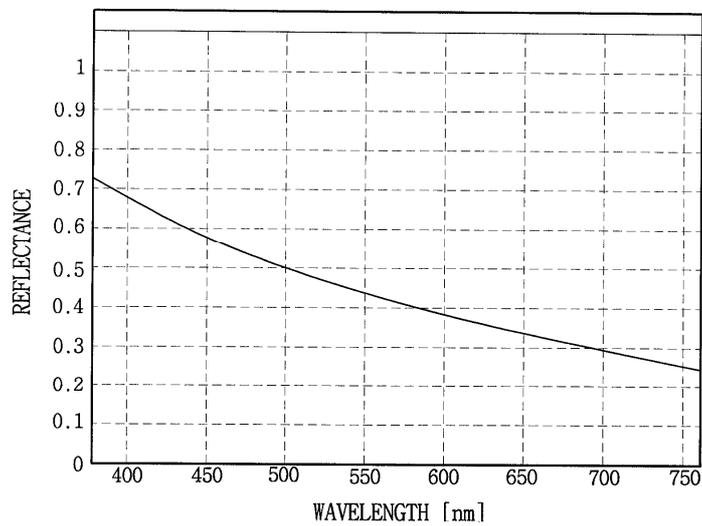
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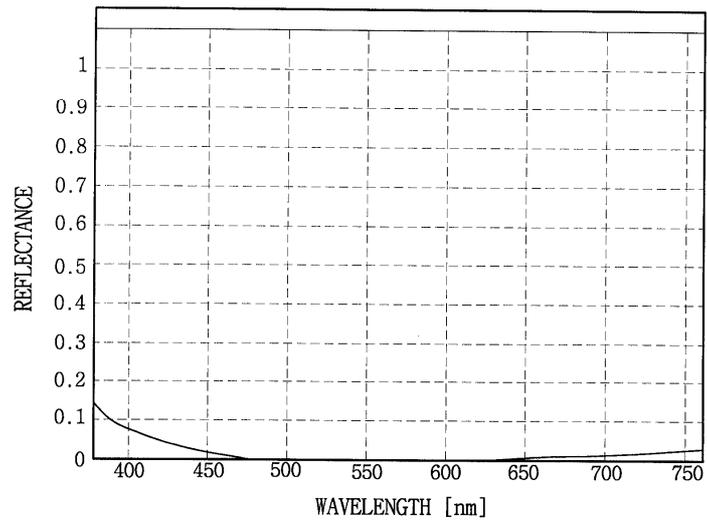
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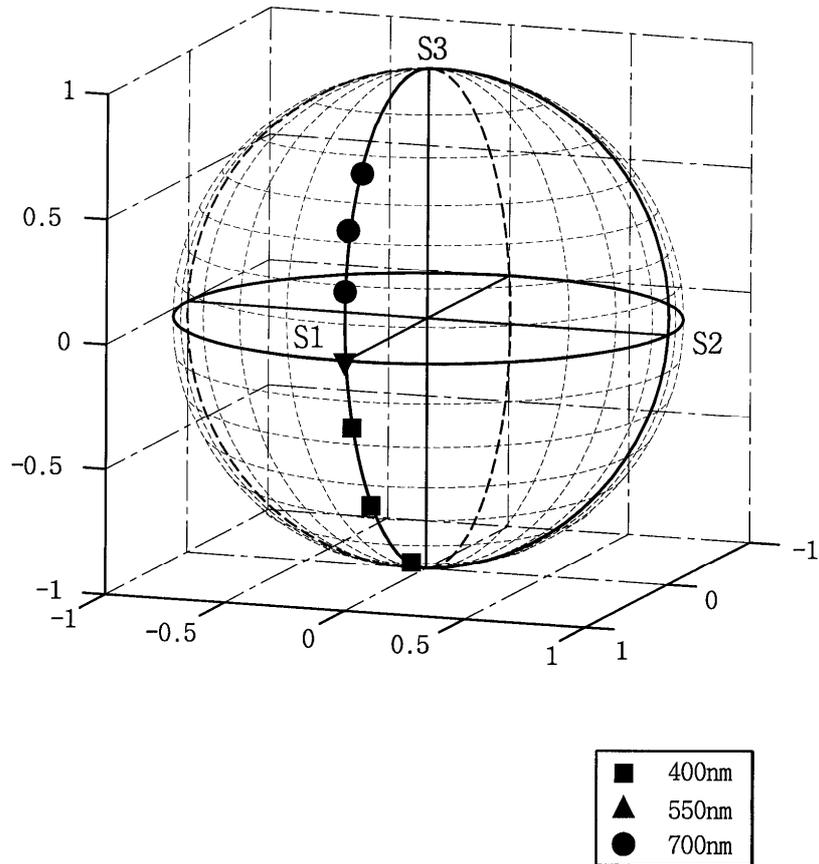
9g



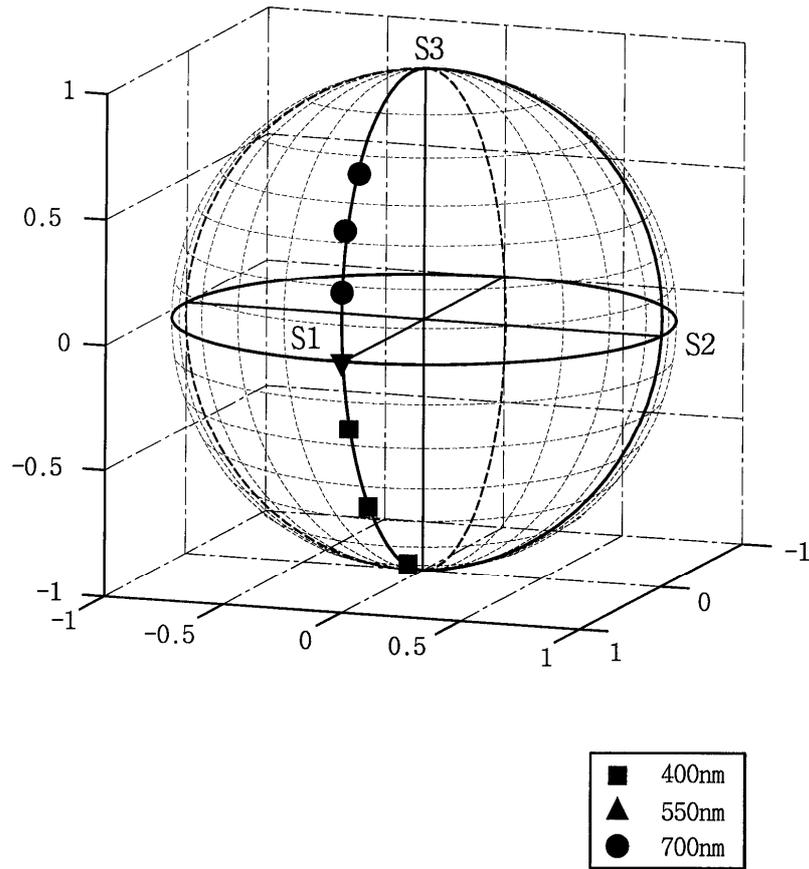
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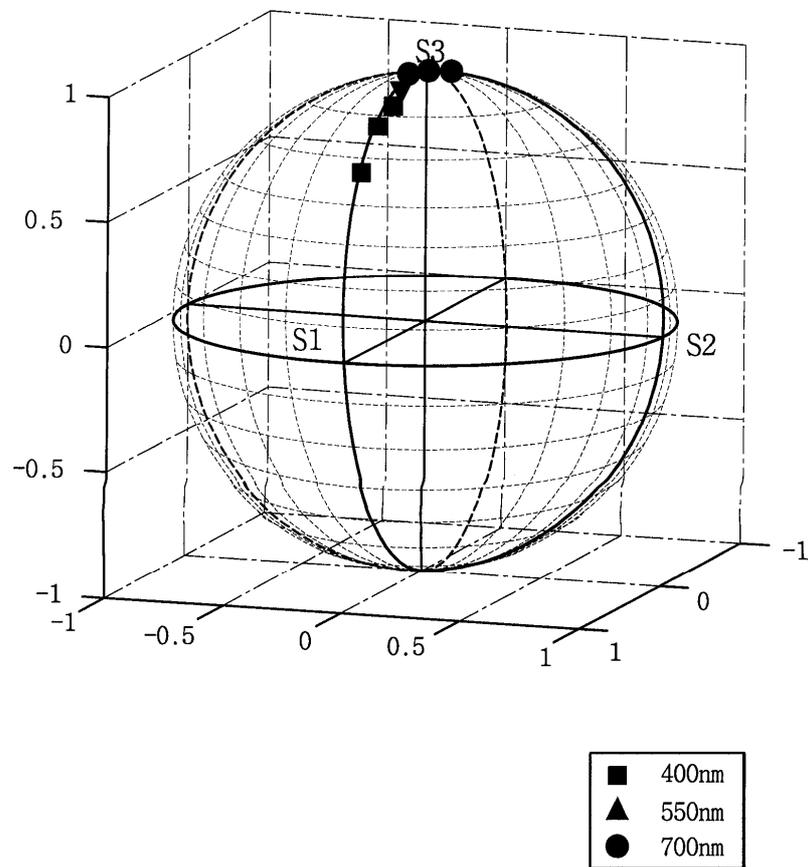
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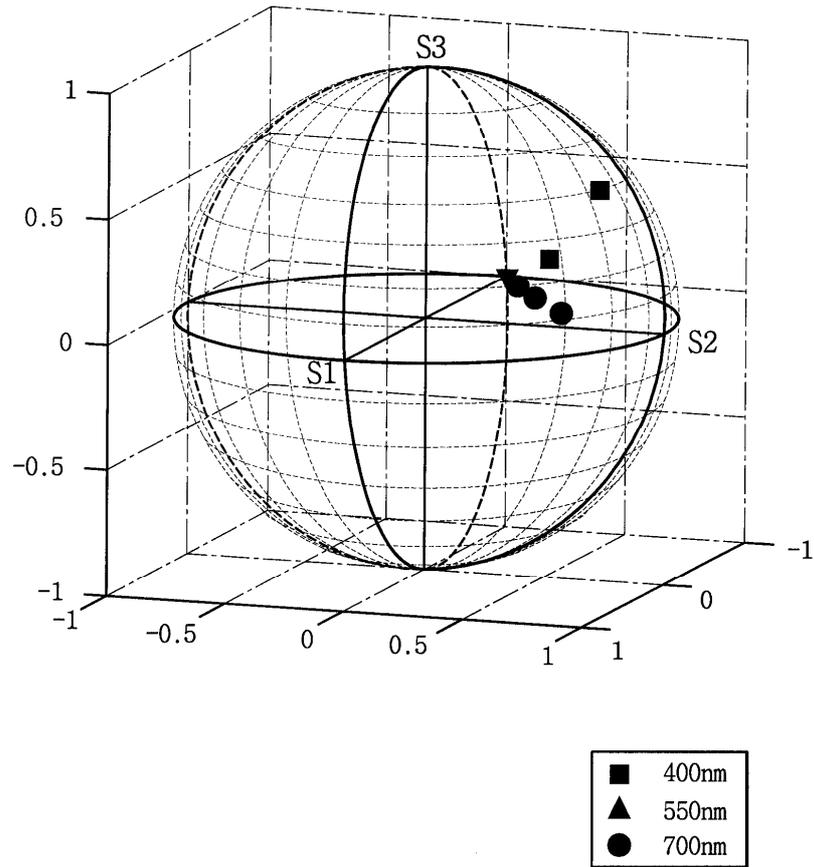
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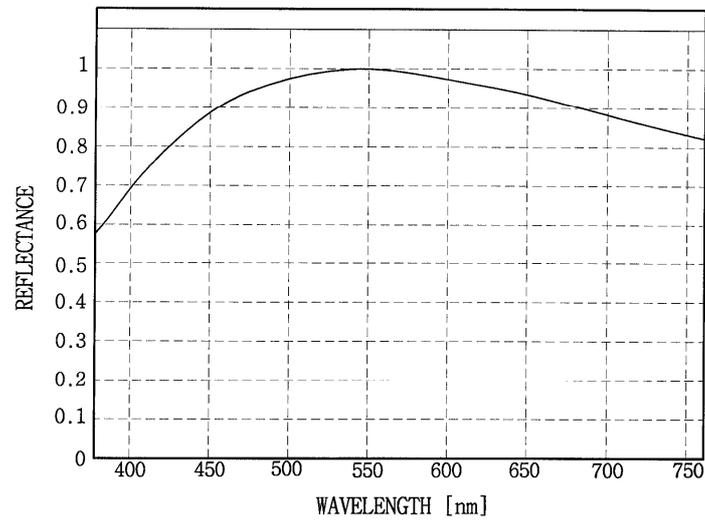
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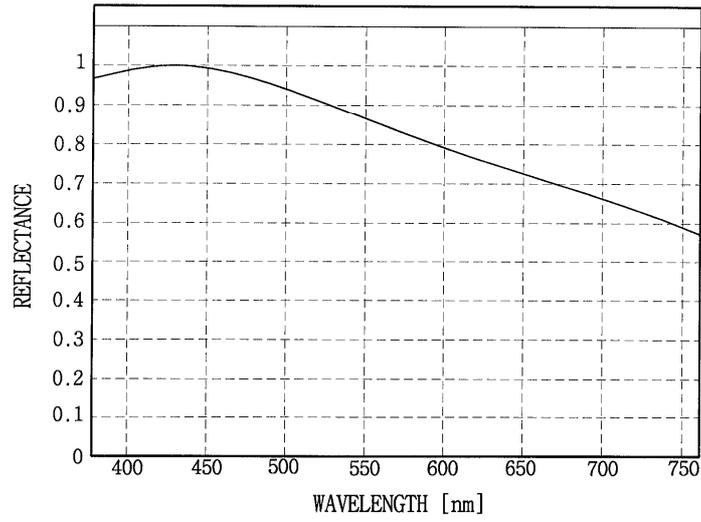
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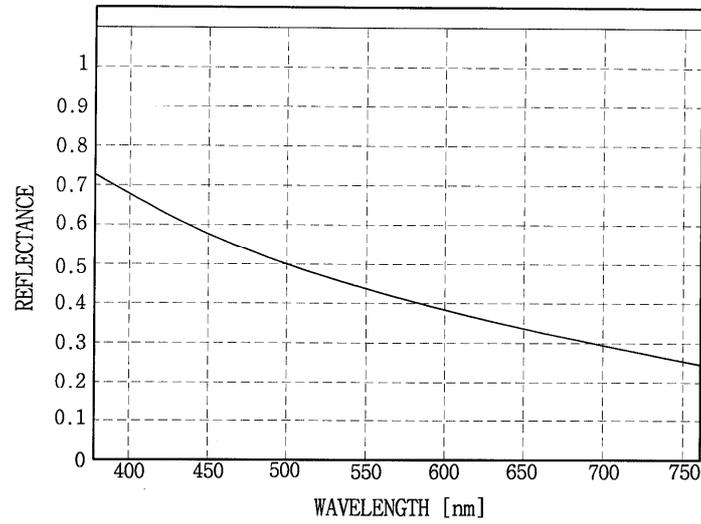
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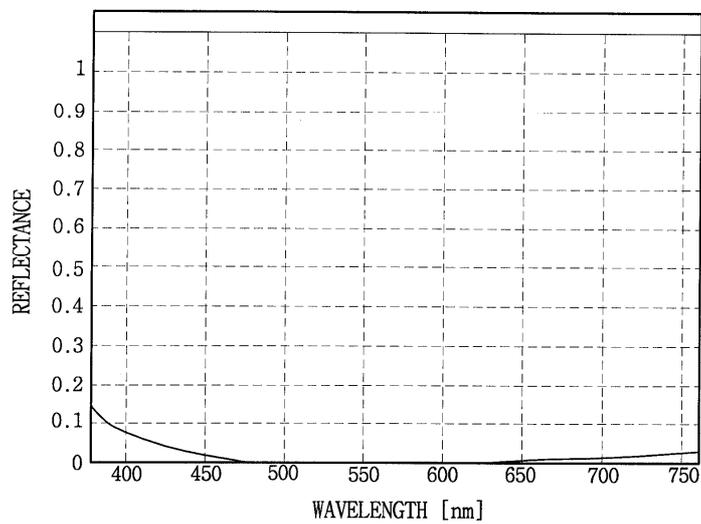
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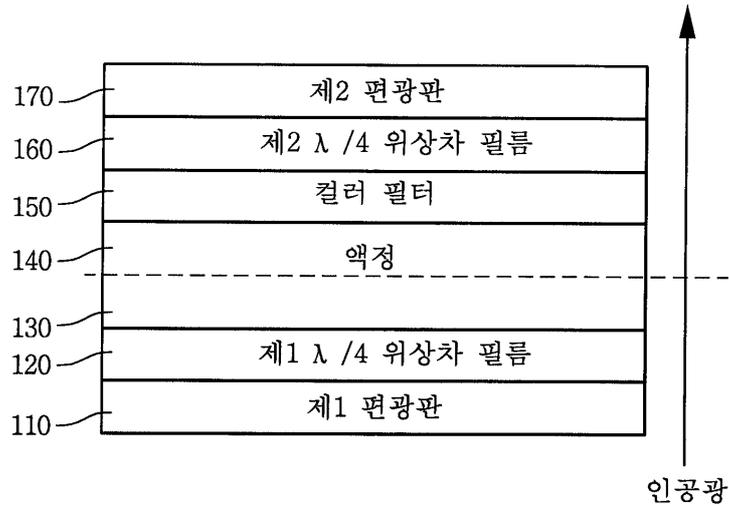
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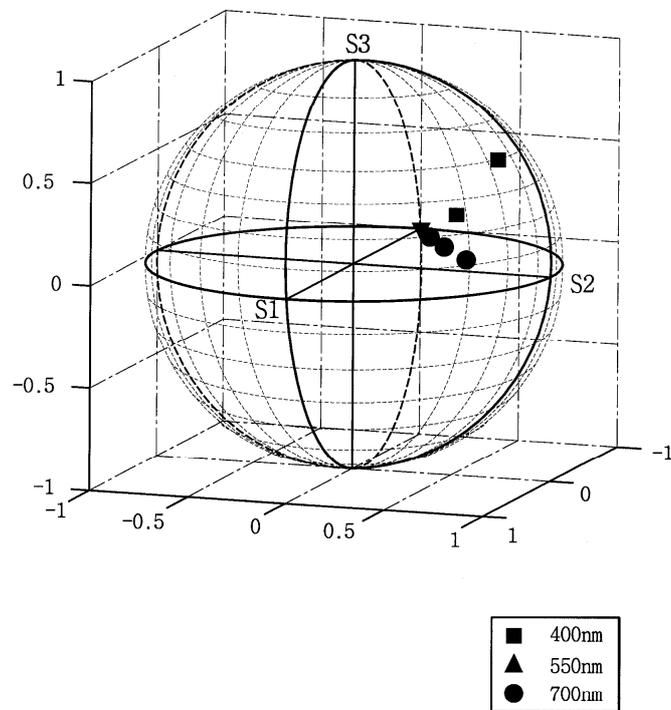
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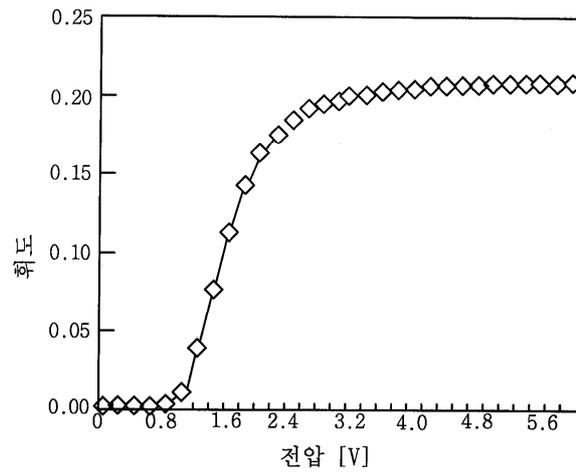
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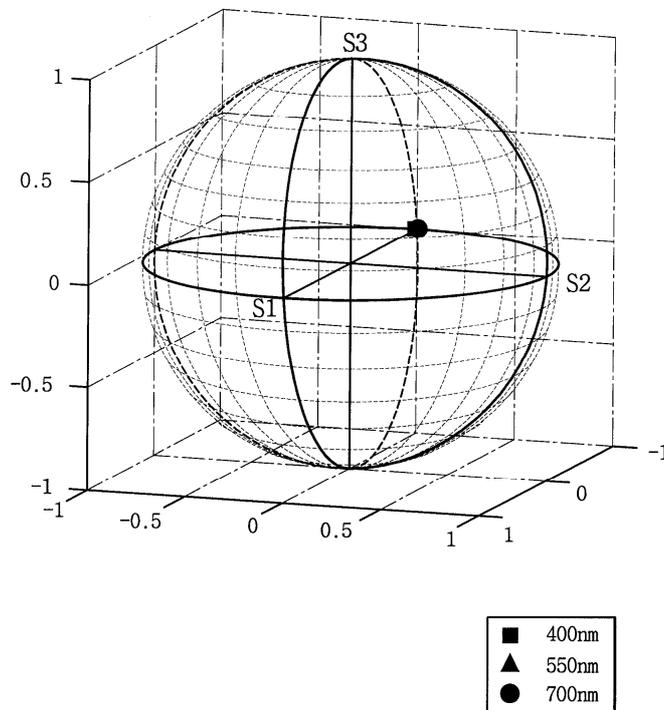
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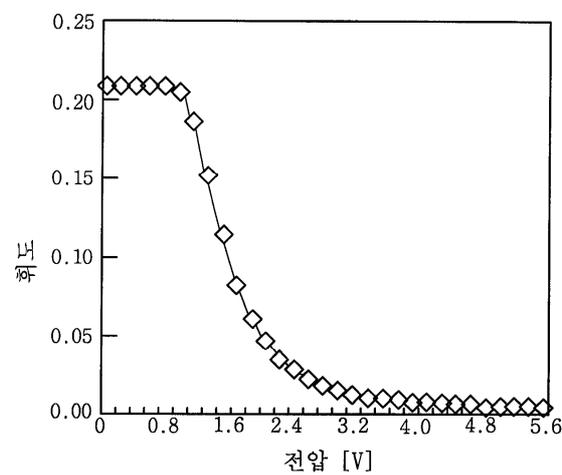
12b



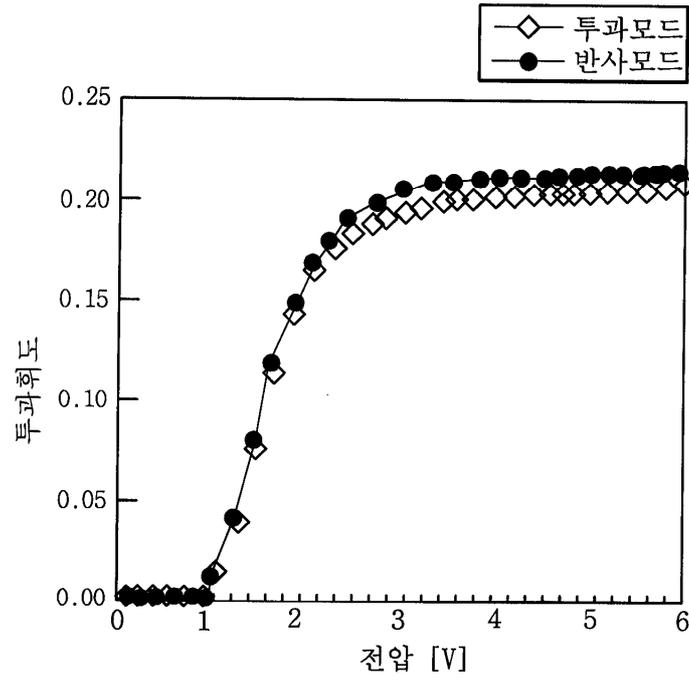
13a



13b



14



专利名称(译)	反射透射型光学膜和具有该光学膜的液晶显示装置		
公开(公告)号	KR1020040069493A	公开(公告)日	2004-08-06
申请号	KR1020030005911	申请日	2003-01-29
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	三星电子有限公司		
当前申请(专利权)人(译)	三星电子有限公司		
[标]发明人	PARK WONSANG 박원상 SAKONG DONGSIK 사공동식 KIM SANGIL 김상일 YANG YOUNGCHOL 양영철 KIM TAEHWAN 김태환		
发明人	박원상 사공동식 김상일 양영철 김태환		
IPC分类号	G02F1/13363		
代理人(译)	PARK, YOUNG WOO		
外部链接	Espacenet		

摘要(译)

公开了一种在减少光学片数量的同时具有相同光学特性的反射 - 透射型光学膜和具有该光学膜的液晶显示装置。当第一相位差膜以第一模式操作时，入射光的相位被延迟第一延迟，并且第二相位差膜在第一和第二模式中被入射光的相位延迟第二延迟并且，反射部分形成在第一延迟膜和第二延迟膜之间的部分区域中。液晶层具有常黑模式的特性并且改变第一延迟光的特性以在第一模式下操作时向第二延迟膜提供第二延迟光并且当在第二模式下操作时改变第二延迟光的特性并且将其输出到反射部分，并改变由反射部分反射的光的特性，以将其提供给第二延迟膜。以这种方式，通过设计在常黑模式下操作的曝光液晶层，每个使用中的液晶层的上和下侧的相位差膜中，光学特性可以减少光学片的数量可以降低制造成本，同时保持。3 指数方面 液晶，通常为黑色，延迟膜，反射，透射，光学特性

