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(12)

(KR)  
(A)

(51) 。 Int. Cl. <sup>7</sup>  
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(11)  
(43)

2002 - 0024514  
2002 03 30

(21) 10 - 2001 - 0010016  
(22) 2001 02 27

(30) 2000 - 295425 2000 09 25 (JP)

(71) 가 가  
가 가 4 6

(72) 가 1 5 - 1  
가 1 5 - 1  
1 5 - 1  
1 5 - 1  
1 5 - 1  
1 5 - 1  
1 5 - 1  
1 5 - 1  
1 5 - 1  
1 5 - 1

(74)

:

(54)

가 가

11) H<sub>2</sub>O<sub>2</sub> 300nm 30% (1  
 가 10%

1

, X

1 (a) 1

1 (b) 1

2 1

3 H<sub>2</sub>O<sub>2</sub>

4 1

5 1 1% 1  
 2% H<sub>2</sub>O<sub>2</sub> 1

6 1 1% 1

7 1

8 1 1% 1  
 2% H<sub>2</sub>O<sub>2</sub> 100

9 1 X

10 1 (111)

11	1				1%	1
2%	H <sub>2</sub> O <sub>2</sub>	1				AFM
12	1				1%	1
				AFM		
13	1					
				AFM		
14	1				1%	1
2%	H <sub>2</sub> O <sub>2</sub>	100				AFM
15	2					
16	2					

< >

1 :

2 :

3 :

4 :

11 :

12 :

13 :

14 :

15 :

16 :

17 :

22 :

22a :

22b :

가

(1) '99 (日經 BP , 1999 ) 54  
PE - CVD (Plasma Enhancement - Chemical Vapor Deposition Method)  
가

(2) 11 - 354801

(3) 11 - 16866

(4) 10 - 64819

가

가  
가

가

100nm

가

0nm

(1)

가

, 10

가

50nm

가

가

(2)

가

가

50nm

$\mu\text{m}$

가

(3)

1 3nm

50nm

가  
가

가

(4)

가

(111)  
가

가

가

450

가

가

(111)

(111)

300nm

Si, Ge, SiGe

(111)

(220)

X

X

가  
I(111)/I(220)가 30

X

30%

10%

(111)  
가

가

200cm<sup>2</sup>/v · s

(111)

2%

가

0.1nm

0.4nm

가

가

가

0.1nm

0.4nm

HF

H<sub>2</sub>O<sub>2</sub>

HF

UV

< >

1 (a) 1  
(a) 300nm

(111)  
가

30% 가

1 (b) 1  
(1)

1 (b)  
(3) 10% 가

(1)가  
(4)

(4)

(2) 가

(3)가

(1)  
(1)

2 1 (4)  
CVD 1 (7059)  
( 50nm)

450

가

30

1%

1

가

(2) 가  
가

가

1

가 2% H<sub>2</sub>O<sub>2</sub>

1

2% H<sub>2</sub>O<sub>2</sub>

(ellipsometry)

3

1, CVD, 1% 1  
 1 2nm  
 3, H<sub>2</sub>O<sub>2</sub> 0.1 30 0.1 0.4nm  
 가  
 XeCl ( 308nm )  
 ( 2 ). 1  
 300 500mJ/cm<sup>2</sup>  
 2 SEM(Scanning Electron Microscopy)  
 4  
 SEM 10μm × 10μm  
 4 가  
 가 400mJ/cm<sup>2</sup>  
 100nm , 400mJ/cm<sup>2</sup>  
 가  
 가 1 2% H<sub>2</sub>O<sub>2</sub> 1 1%  
 , 500mJ/cm<sup>2</sup> 278nm  
 H<sub>2</sub>O<sub>2</sub> 100 220nm ( )  
 ), 239nm ( )  
 ), 204nm  
 가  
 가 500mJ/cm<sup>2</sup> 5, 6, 7, 8  
 1% 1 2% H<sub>2</sub>O<sub>2</sub> 1  
 6 1% 1 7  
 , 8 1% 1 2% H<sub>2</sub>O<sub>2</sub> 100  
 ( 2 3nm)

가 , 2% H<sub>2</sub>O<sub>2</sub> 1 ( : 63nm),  
 55nm , ( : 88nm), ( : 68nm) , 2% H<sub>2</sub>O<sub>2</sub> 100  
 가 .

(%) = /

가 20% , 1 H<sub>2</sub>O<sub>2</sub> 1 ( : 26%),  
 ( : 43%), H<sub>2</sub>O<sub>2</sub> 100 ( : 31%) , 1

5 8 가 ,

가 ,

1 1 2 가 .

가 ,

9 3 X . 9 300mJ/cm<sup>2</sup>  
 ( 4 ), (111) (220) 가 .  
 (111) /(220) ,  
 10

1.8 .

10 (111) 가 , 가 .

H<sub>2</sub>O<sub>2</sub> 400mJ/cm<sup>2</sup>  
 (111)

J/cm<sup>2</sup> , 2% H<sub>2</sub>O<sub>2</sub> 1 , 430m  
60 30 , 500mJ/cm<sup>2</sup>

1 2  
(111)

가

AFM(Atomic Force Mi  
( 20  
microscopy) 가 . AFM  
μm × 20μm ) 가 ,

500mJ/cm<sup>2</sup> AFM  
11, 12,

13 14

11  
1 ( : 0.1 0.4nm) , 12 1% H<sub>2</sub>O<sub>2</sub>

1% H<sub>2</sub>O<sub>2</sub> 100 ( : 2 3nm) . 13 14

AFM

가가

11 1% H<sub>2</sub>O<sub>2</sub> 1 ,  
6.7nm .

( 24.3nm, 13 ) ( 24.0nm, 12 ),  
00 ( 23.5nm, 14 ) 1% H<sub>2</sub>O<sub>2</sub> 1

12, 13 14 가 11% 12% 11% 11 / 2%,

12 가 24.0nm가 100nm

13 14 1nm

H<sub>2</sub>O<sub>2</sub> 0.1 0.4nm

, 2% , 10nm 가 . ,  
 , 1 H<sub>2</sub>O<sub>2</sub>  
 , UV , 1% , 2/1000  
 ( : 0.1nm 0.4nm)  
 가 .  
 가 0.1nm 가 0.4nm  
 , 가 , 가 0.4nm  
 , 1 (7059) , PET ( )  
 , CVD , 450 , LPCV  
 D(Low Pressure Chemical Vapor Deposition) , 가  
 , 1 ,  
 , 1 KrF ( XeCl ( 308nm)  
 , 248nm) YAG , Ar .  
 , 15 2 .  
 , (11) CVD (12) 50nm  
 , 가 450 , (11) , 30  
 (12)  
 , (12) 1 , 2% H<sub>2</sub>O<sub>2</sub> 1  
 (12) ( 0.15nm, ) .  
 , (11)  
 , (12) XeCl ( 308nm, 20nsec)  
 (12) (22)  
 460mJ/cm<sup>2</sup> .  
 , (22)  
 , (22) .

(13) (100nm) CVD (22)

TiW (14) (200nm)

(22) TiW (14) (22a), (22b), (22b)

N (22b) N

P P

(22) , RTA (Rapid Thermal Annealing)

가

(15) CVD TiW (14) (13) (15) 500nm (22b)

(22b) (16) (22b) (22b) TiW/Al

(17)

가 400 , 60 15 N

16 ) (1) (A)

50 ) 1% 1 2% H<sub>2</sub>O<sub>2</sub> 1

(B)

10 (111) 4

가 5 8

(111) 가

가 가 H<sub>2</sub>O<sub>2</sub>

가 16 가 400mJ/cm<sup>2</sup> 가 440mJ/cm<sup>2</sup>

가 50cm<sup>2</sup>/v · s 가 400mJ/cm<sup>2</sup> 가 200cm<sup>2</sup>/v · s

2 ) 7059 , PET( CVD LPCVD

UV H<sub>2</sub>O<sub>2</sub>  
 , 2/1000  
 248nm) YAG Ar XeC1 ( 308nm) KrF (  
 2 200cm<sup>2</sup>/v · s

가

(111)

200cm<sup>2</sup>/v · s

가

(57)

1.

(111)  
300nm

2.

1

Si Ge Si Ge

3.

1 ,  
(220) (111) X , I(111)/I(220)가 30

4.

1 ,  
가 30%

5.

1 ,  
가, 10%

6.

1 ,  
가  $200\text{cm}^2/\text{v} \cdot \text{s}$

7.

(111)

8.

0.1nm 가 0.4nm

9.

8 ,  
HF

10.

9 ,



11.

8 ,

HF

UV

12.

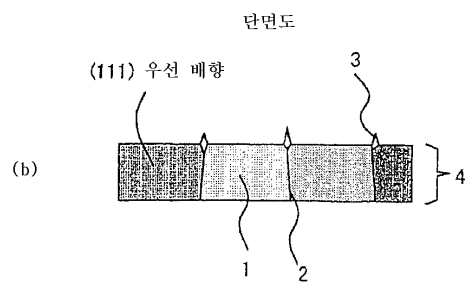
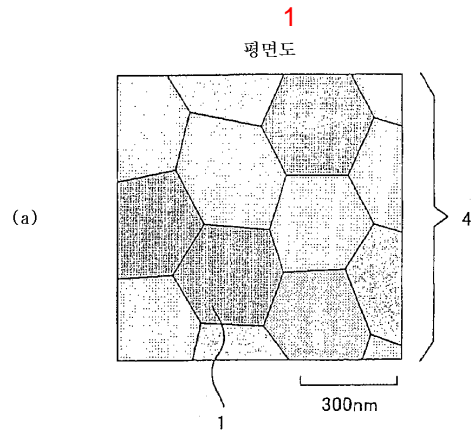
(111)

2%

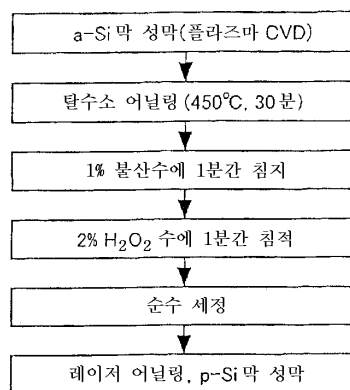
13.

HF

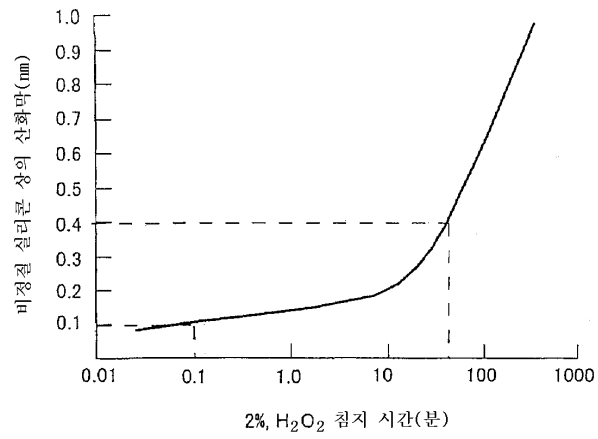




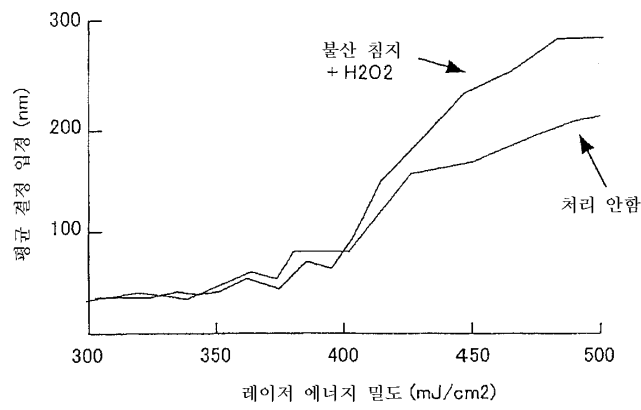
2



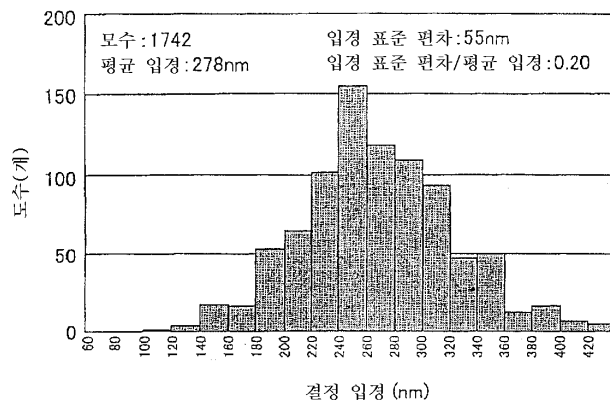
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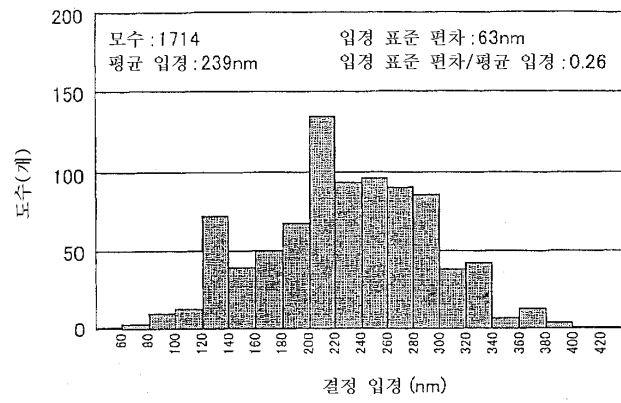
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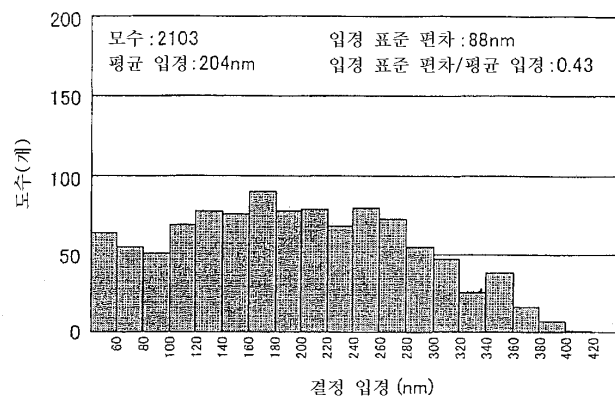
5



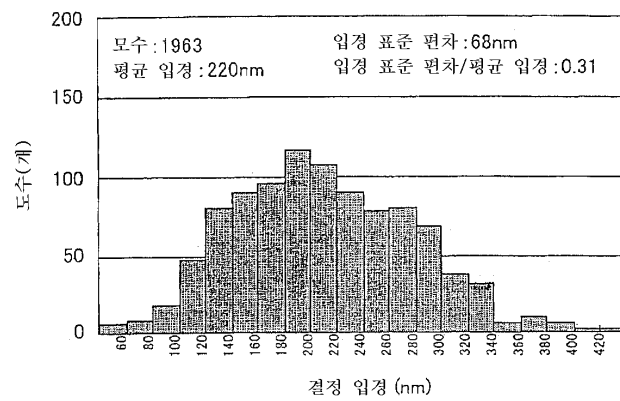
6



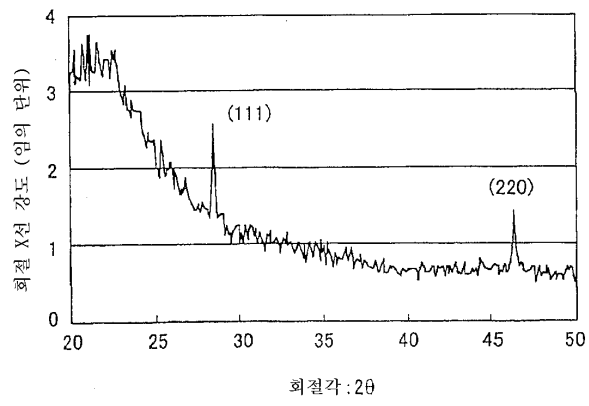
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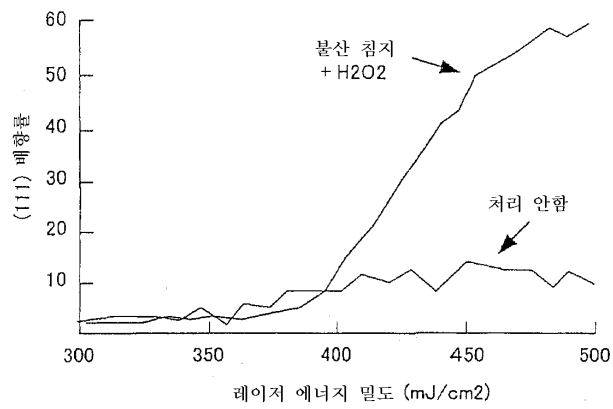
8



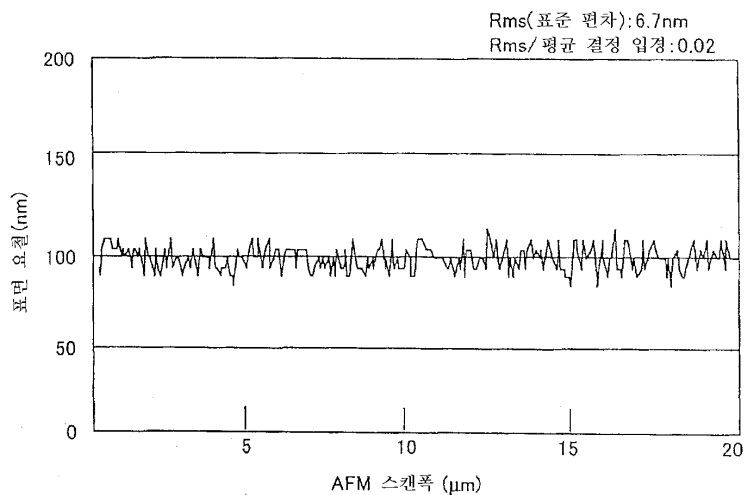
9



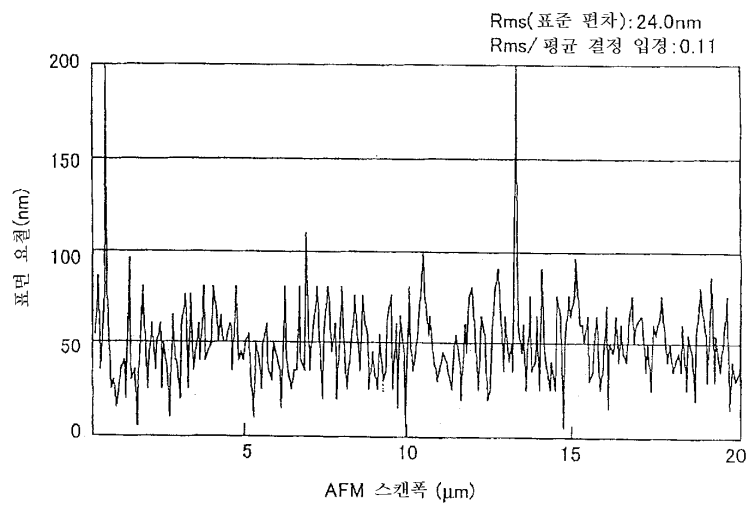
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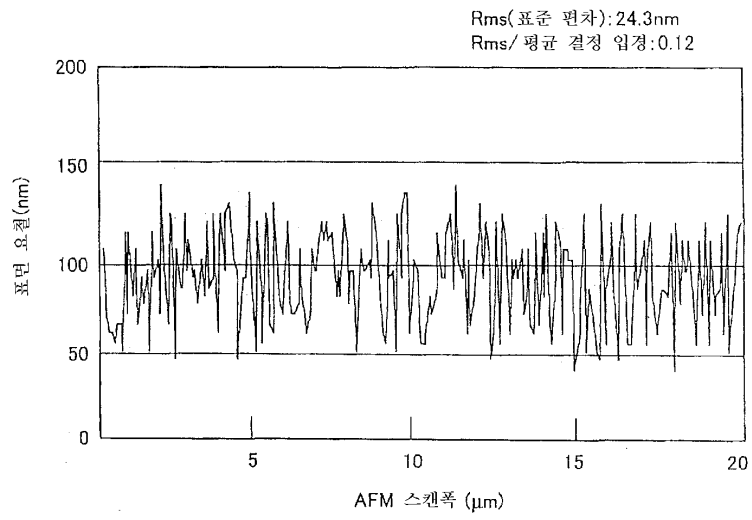
11



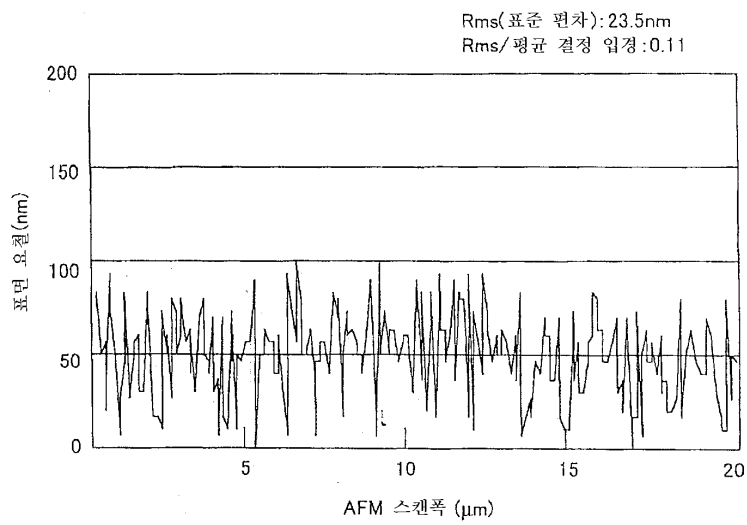
12



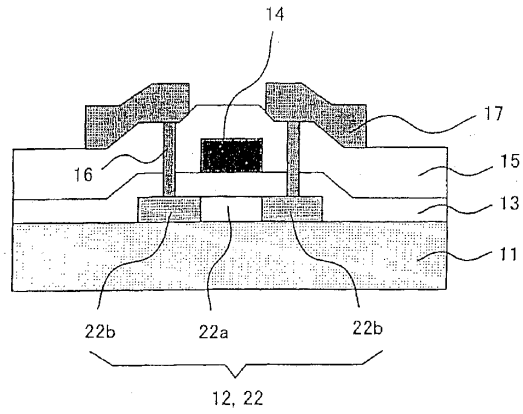
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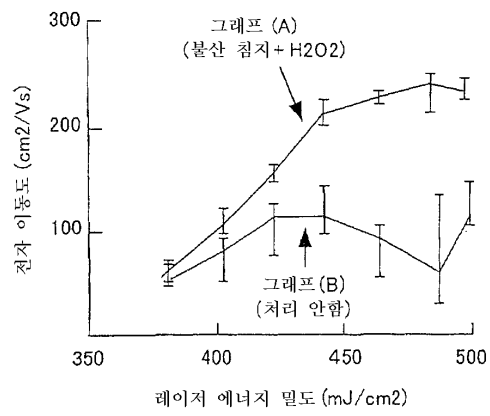
14



15



16



专利名称(译)	用于液晶显示器的薄膜半导体器件及其制造方法		
公开(公告)号	<a href="#">KR1020020024514A</a>	公开(公告)日	2002-03-30
申请号	KR1020010010016	申请日	2001-02-27
[标]申请(专利权)人(译)	日立HITACHI SEISAKUSHODBA		
申请(专利权)人(译)	株式会社日立制作所		
当前申请(专利权)人(译)	株式会社日立制作所		
[标]发明人	TAMURA TAKUO 다무라다꾸오 OGATA KIYOSHI 오가따기요시 TAKAHARA YOUICHI 다카하라요우이찌 YAMAGUCHI HIRONARU 야마구찌히로나루 KIMURA YOSHINOBU 기무라요시노부 OKURA MAKOTO 오후라마꼬또 ABE HIRONOBU 아베히로노부 SHIMOMURA SHIGEO 시모무라시게오 SAITOU MASAKAZU 사이또우마사까즈 TAKAHASHI MICHIKO 다카하시미찌꼬		
发明人	다무라다꾸오 오가따기요시 다카하라요우이찌 야마구찌히로나루 기무라요시노부 오후라마꼬또 아베히로노부 시모무라시게오 사이또우마사까즈 다카하시미찌꼬		
IPC分类号	G02F1/1362 H01L29/786 H01L21/316 H01L21/336 G02F1/1368 H01L21/26 H01L21/20		
CPC分类号	H01L29/66757 G02F2202/104 H01L29/78675 G02F1/13454 G02F1/1368		
代理人(译)	CHANG, SOO KIL		
优先权	2000295425 2000-09-25 JP		
其他公开文献	KR100404701B1		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

晶体取向很高。适用于液晶显示器的多晶硅层用于其中表面像差被抑制得较低，此外，实现了晶体粒径的变化。为此，使用氟酸溶液完全除去在通过激光照射在非晶硅膜表面上的结晶处理之前形成的自然氧化膜。它在H<sub>2</sub>O<sub>2</sub>溶液中浸入并进入短时间，并且在非晶硅膜的表面上再次形成相当薄的膜的氧化膜。此后，被称为晶体颗粒的平均晶粒尺寸的多晶硅层在晶体表面的凹凸中的标准偏差小于标准粒径的小于300%的30%，是10%或更小的平均粒径是形成通过二氧化层进行激光退火处理的晶体颗粒的聚集体。薄膜半导体器件，多晶硅层，晶体取向，激光退火处理，X射线衍射强度比。

