

(19)
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(A)(51) 。 Int. Cl. ⁷
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(43)2002 - 0090428
2002 12 05(21) 10 - 2001 - 0028958
(22) 2001 05 25(71) .
20(72) 103 701
110 910
6 808 - 1208

(74)

:

(54)

가

가

,

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가

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가

,

가

가

.

3b

,

가

1a 1c .

2a 2c 1 .

3a 3c 2 .

4a 4e .

5a 5f .

201 : 202 :

203 : 204 : 가

205 :

, 가

(TFT - LCD)가 ,

(a - Si:H TFT) (Mobility) 가가 ,
가

(Polycrystalline silicon T

FT ; Poly - Si TFT)가 .

TFT 가

, TFT TFT 가 TFT 가 ,
TFT 가

가 가 ,

(Low Pressure Chemical Vapor Deposition ; LPCVD) ,

(Plasma Enhanced Chemical Vapor Deposition ; PECVD) , LPCVD 가 55
0 가 (silica) (quartz) 가가
PECVD $\text{SiF}_4/\text{SiH}_4/\text{H}_2$ 가 400 가

가

(Solid Phase Crystallization ; SPC) ,
 (Excimer Laser Annealing ; ELA) .

ELA (eximer laser) 가 가
 LCD TFT , ELA 가 가
 (furnace) 가 가 가 ,
 가 가 600 가 .

가 , 가 , 가 (Metal Induced Crystallization)
 가 (Electric Field Enhanc
 ed Metal Induced Crystallization) .

500
 (a - Si:H)

(Al), (Au), (Ag) (Si) (diffusion)
 (silicide)

(Ni), (Ti) (annealing) , 가

1a 1c
 1a (101) (SiO₂) (102)
 (103) , (104) (Ni) .
 1b (104) 가 (105) 가
 (Mo) .
 (105) 가 (Ni) , 1c , 1b
 (NiSi₂)가 (Si) (NiSi₂) .
 (106) .

(104a)(1c)

(Point defect)

가 가 , 가 , , 가 가 , 가 , , / , / , . , / , , 1 2 , 가 가 , 가 , , / , 1 / , 1 2 , 2a 2c 1 , 3a 3c , 2a (201) (SiO₂) (SiN_x) (202) 가 (204) .

가 (204) (P)
 (B)가 (Microcrystalline Si) .

가 (204) SiH_4 H_2 가 (Plasma Enhanced Chemical Vapor Deposition) (a - Si:H) (203) .

2b (203) 가 (2) 04) (204) 가 (205) 가 . , (205) (Mo), (Graphite) .

(205) 가 10 500V/cm, 가 15 300 , 400 600 가 .

2c (203) (206) .

가 가 가 가 가 가 500 , 600 가 .

가 .

가 .

가 .

2 .

3a (201) (202) (202) SiH_4 H_2 가 (Plasma Enhanced Chemical Vapor Deposition) (a - Si:H) (203) .

(203) 가 (204) .

가 (203) (P)
 (B)가 .

3b 가 (204) 가 (205) 가 .

(205) (Mo), (Graphite) .

(205) 가 10 500V/cm, 가 15 300 , 400 600 가 .

3c (203) (206) .

1 .

4a 4e 1, 2

4a (201)
(202) (a-Si:H) (203) (202) (20
1) (203)
SiH₄ H₂ 가 (PECVD)
, (203) 가 (204)
, 가 (204) (P)
(B)가 (Microcrystalline Si)
, 가 1
가

05) 4b 가 (204) 가 (2
가 (205) (Mo), (Graphite)
, (205) 가 10 500V/cm, 가 15 300 (203)
, 400 600 (205) 가
(206) (203) (206) 4c
(206) (206)
(207)

, 4d (207) AlNd, Mo
(208)
, (208) (208)
(206) n+ /
(208) (209)
4e (207) n+ (206) (209)
(Via hole) AlNd, Mo
, / (210, 211)

5a 5f

5a 1 (201a) (202) (202)
SiH₄ H₄ 가 (203)
가 ()

, 5b (203) (206)

7) AlNd, Mo (206) (208)

$$\frac{d}{dt} \left(\frac{\partial L}{\partial v} \right) = \frac{\partial L}{\partial x}, \quad (208)$$

$$L = \frac{1}{2} m v^2 - U(x), \quad (209)$$

$$U(x) = \int_{x_0}^x F(x') dx'. \quad (210)$$

211) AlNd, Mo (209) n+ (207) (206) / 가 (210) (

5f, (212) BCB (Benzocyclobutene) 2, (210, 211) 1, (213) (211)

(211) , ITO(Indium Tin Oxide) (214) .

1 (201a) 2

(214) $\frac{1}{2}$ 가 .

가

(57)

1.

•

가 ;

가 ;

가 가 .

2.

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가 ;

가 가 .

3.

1 2 , ,

가 가 10 500V/cm, 가 15 300 , 400 600

4.

1 2 , 가 .

5.

4 , (P) (B)가

6.

1 2 ,

1 ,

,

가 ,

가 가 ,

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/ ,

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/

,

,

1 2

.

7.

6 , 가 .

8.

7 , (P) (B)가 .

9.

6 , ,
가 가 10 500V/cm, 가 15 300 , 400 600 .

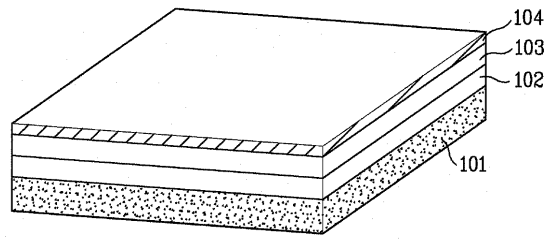
10.

6 , / AlNd, Mo .

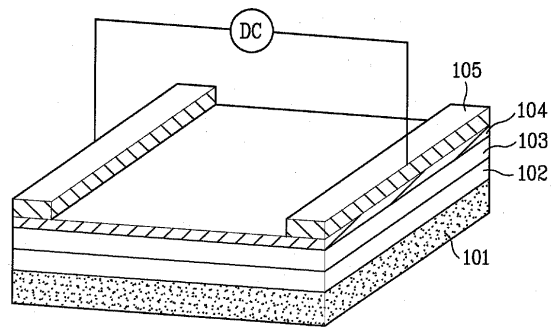
11.

6 ,
/ BCB ,

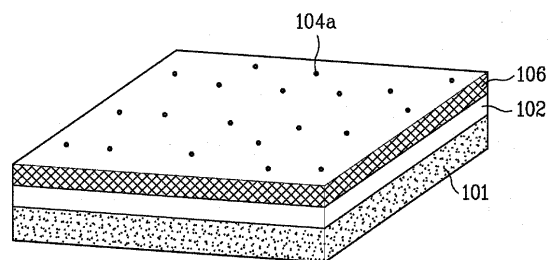
1a



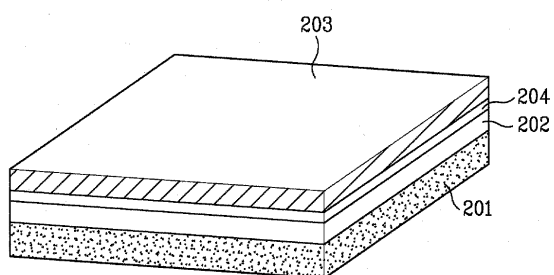
1b



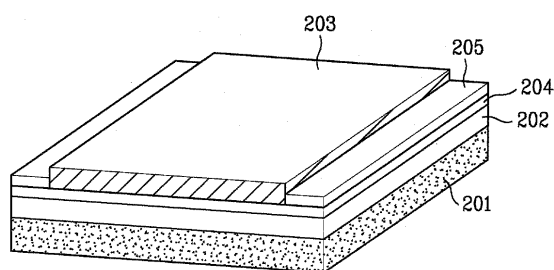
1c



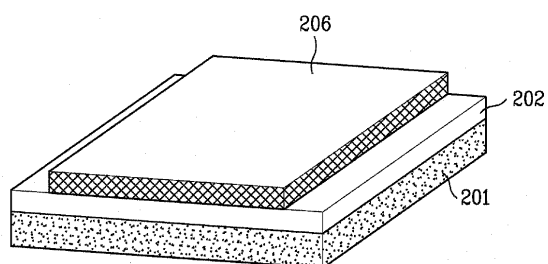
2a



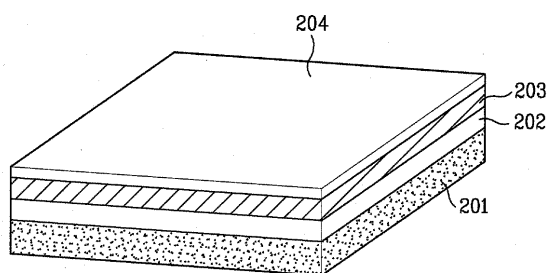
2b



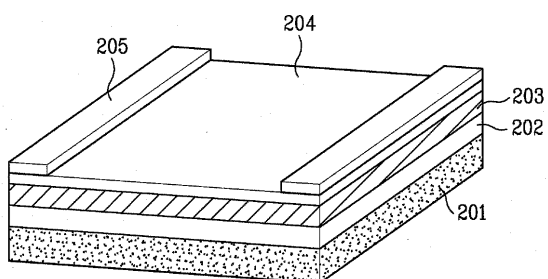
2c



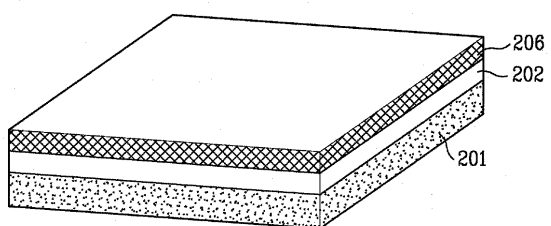
3a



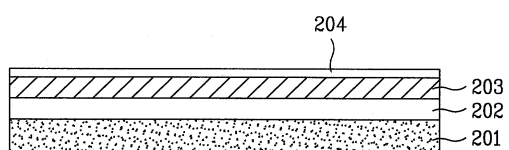
3b



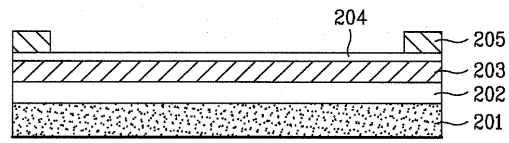
3c



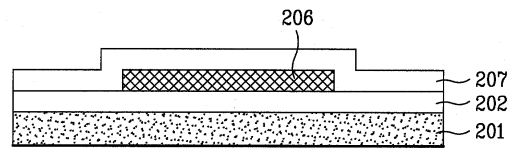
4a



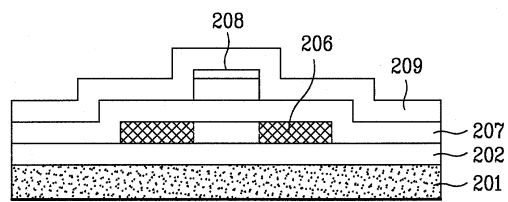
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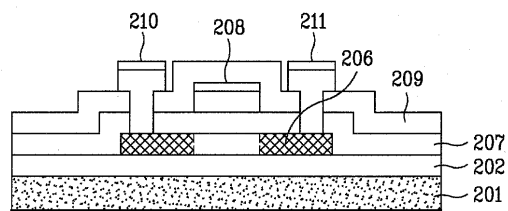
4c



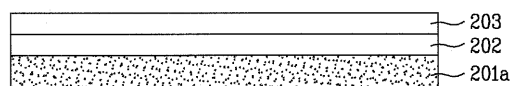
4d



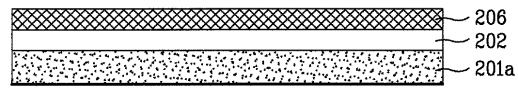
4e



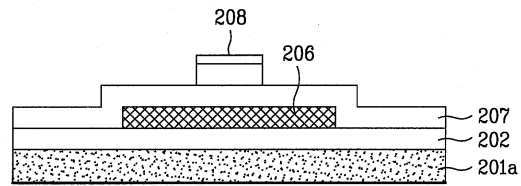
5a



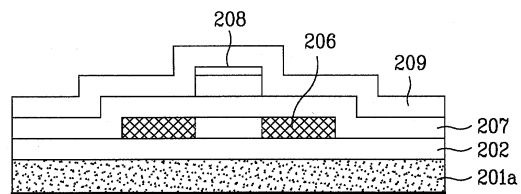
5b



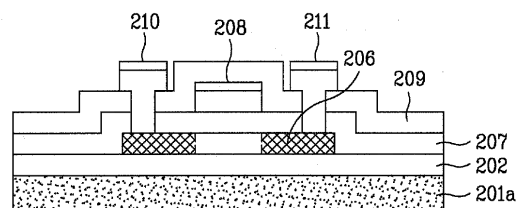
5c



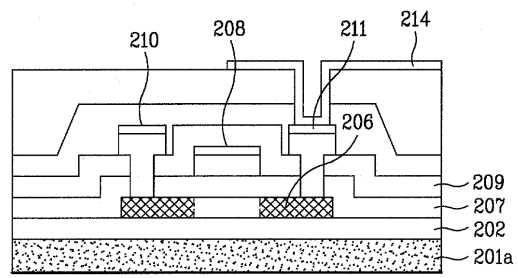
5d



5e



5f



专利名称(译)	多晶化方法，使用其的薄膜晶体管的制造方法以及液晶显示器的制造方法		
公开(公告)号	KR1020020090428A	公开(公告)日	2002-12-05
申请号	KR1020010028958	申请日	2001-05-25
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG显示器有限公司		
当前申请(专利权)人(译)	LG显示器有限公司		
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IPC分类号	G02F1/136		
代理人(译)	金勇 新昌		
其他公开文献	KR100525436B1		
外部链接	Espacenet		

摘要(译)

本发明涉及通过局部加热使非晶硅层多晶化的方法，在非晶硅层的上部或下部形成表面电阻加热材料。并且根据本发明的多晶化方法包括在绝缘基板上形成缓冲层的步骤中形成电极的步骤，在缓冲层上形成表面电阻加热材料的步骤，形成非晶硅的步骤在表面电阻加热材料层，暴露表面电阻加热材料的步骤，蚀刻，暴露表面电阻加热材料如上所述，和结晶步骤与多晶硅非晶硅层进行热处理。多晶硅和表面电阻加热材料。

