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2002 03 22
10 - 0329206
2002 03 06

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(22)

10 - 1999 - 0027808
1999 07 09

(65)
(43)

2001 - 0009445
2001 02 05

(73)

134

(72)

2 515 - 40

3 344 - 140

3 1507 1501

(74)

:

(54)

3~8

3c

1 .

2 RBS RHEED

3 .

4 .

5 RBS RHEED .

6 .

7 R

HEED .

<

1, 101 : 3, 103 :

111 :

가 , (Thin Film)

가 , (Sputtering) , (Thermal evaporation)

가 , (Molecular Beam Epitaxy : MBE) , (Chemical Vapor Deposition : CVD)

가 , (adatom)

가 , ($10^{-4} \sim 10^{-2}$ Torr) , adatom

가 (eV) 가 ,

가 가

가 () , ()

CVD

MBE

가 , adtom

1000 가 가 (Ion Gun) 가

가

가 ,
(radical beam), (ion beam) 가

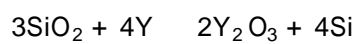
1

, 가 (1) (1)
 가 (1)
 (1) 가 (1) (3)

가 , 가

 $Y + O \rightarrow Y_2O_3$: $Y + Si \rightarrow YSi$: $O + Si \rightarrow SiO_2$:

가 1~2



Time (min)	RBS Intensity	RHEED Intensity
0	10	5
10	85	75
20	75	65
30	65	55
40	55	45
50	45	35
60	35	25

4~6, 가

3

(101) (101) (3a).

(101) 3~8, 4~6 (111) (1

11) . (SiO₂) 1 5, (111)

15 ~ 40 . (111)

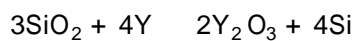
(3b).

(111) (101) , (10⁻⁷ torr)
 , 가 , (111)
 (103) , (111) (101) (103)
 Bulk ,
 (111) (101) (103)
 (111) (101) (3c).

3~8 1~2
 , 가 ,
 9 , 가 ,
 , 3~8 가

(101) 3~8 (111)
 ,
 RCA RCA ,
 4~6 ,

가
 1
 , 4~6
 가 (111) (101) , 가
 , (111)
 가



, (101) , (101)
 (103) , 가
 , 4 , (101) , 3~5 (111) ,
 (103)

RHEED 2 RBS
 5 , RBS RBS RHEED
 가 , RBS min 3%

. 3~8

가

(Capacitance)

가

, 800

800

, 6

가

(Ce)

가

, RHEED

7

Si

 O_2 Y_2O_3

2

3~8

4~6

1

5

15 ~ 40

 (10^{-7} Torr)

, Pt 가

Pt

Pt

SiO O

Pt

, Pt

(surfactant)

3

2

PtSi가

3~8 , 15 ~40

RCA

(57)

1.

;

가

;

2.

3.

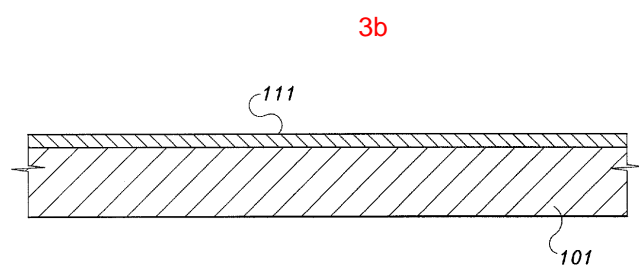
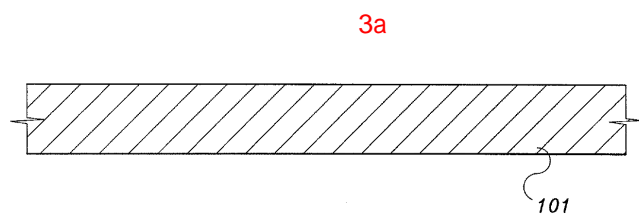
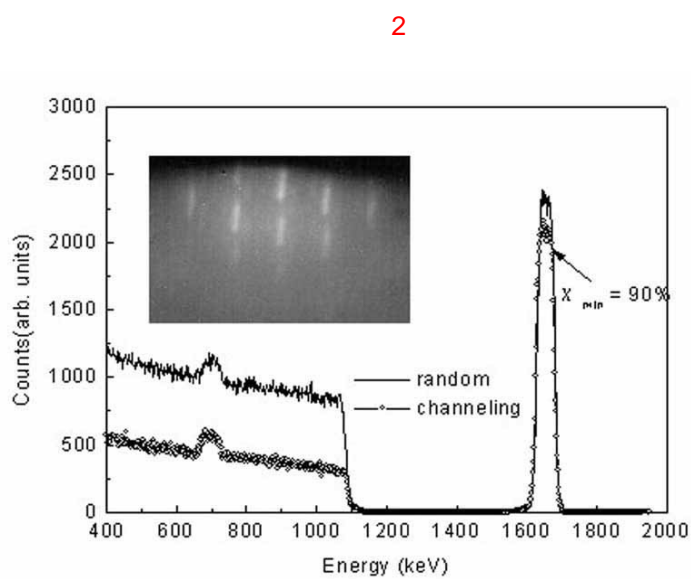
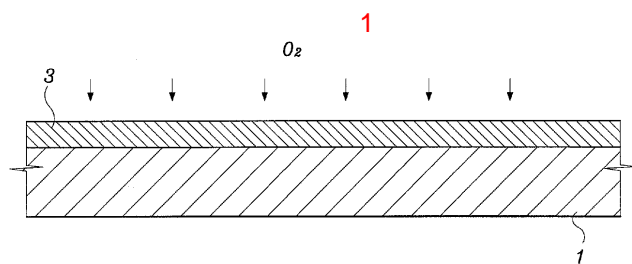
1 ,

800

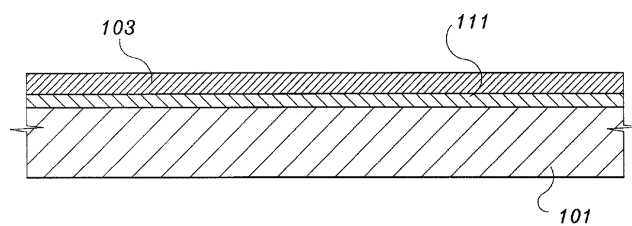
4.

1 ,

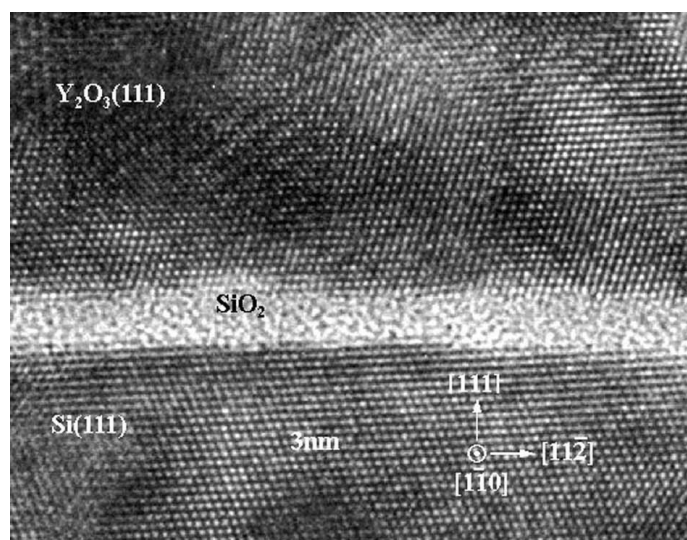
3~8



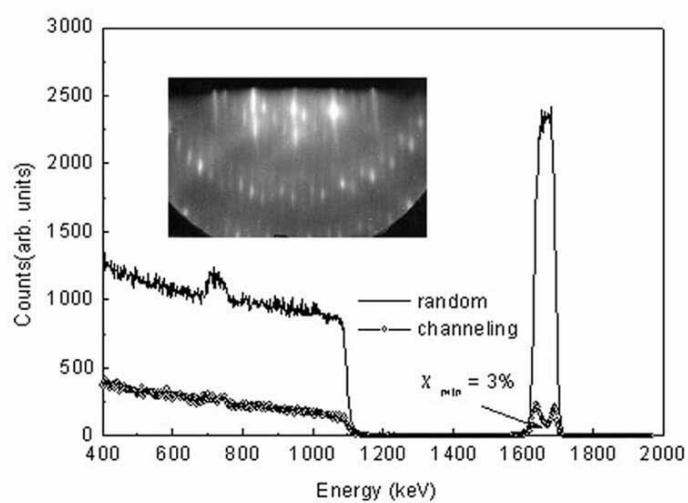
3c



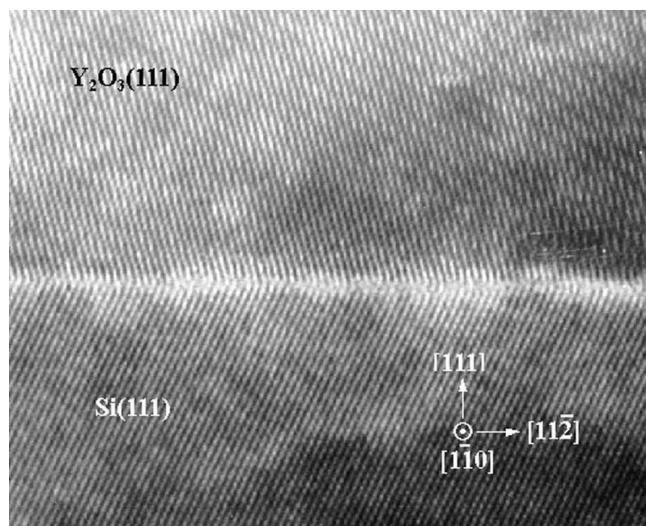
4



5



6



7

