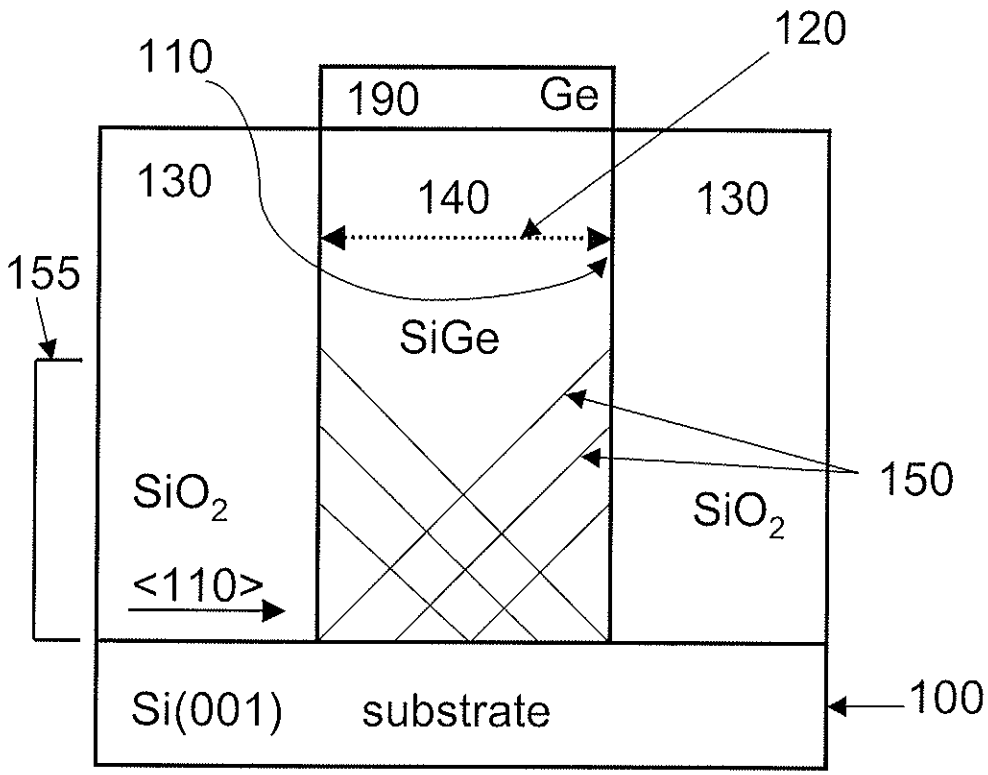

110
120
190
Ge
130
140
130
155
SiGe
150
SiO_2
SiO_2
<110>
Si(001) substrate
100

Fig. 1a

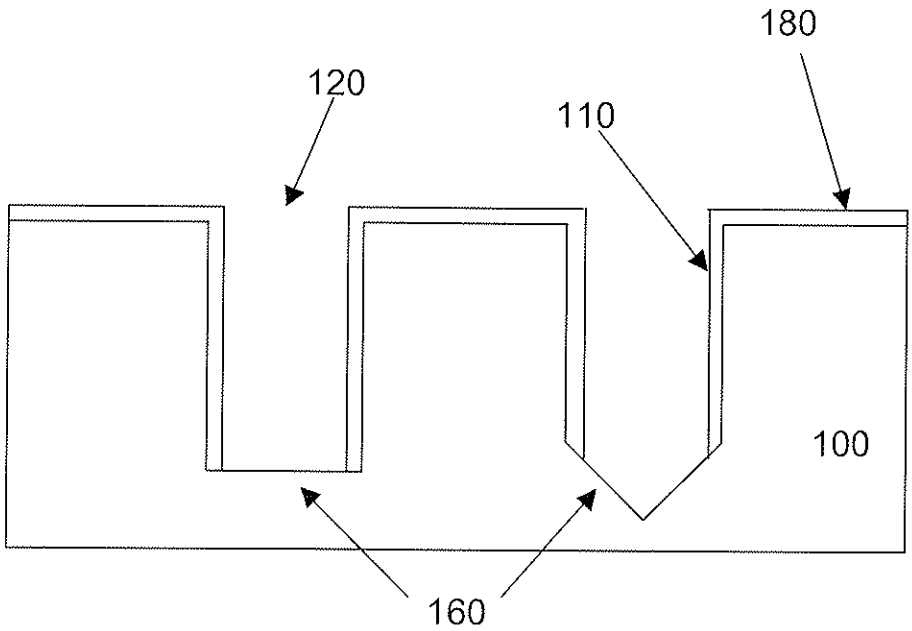


Fig. 1b

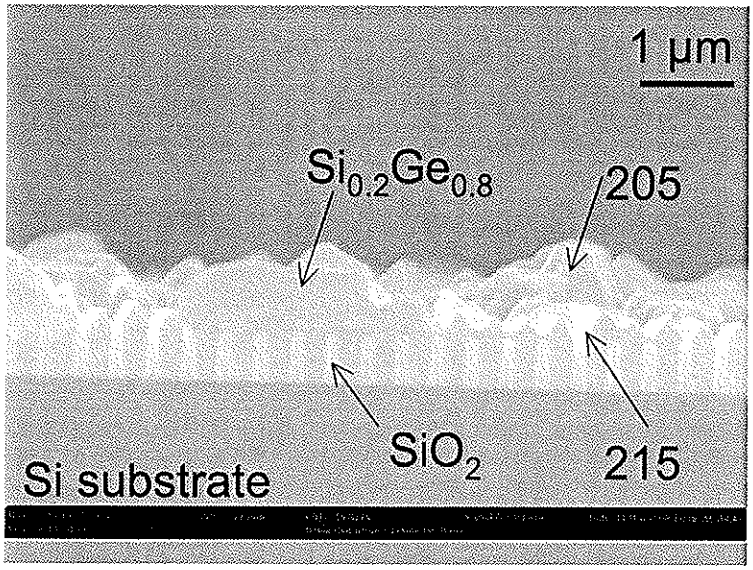


Fig. 2 (a)

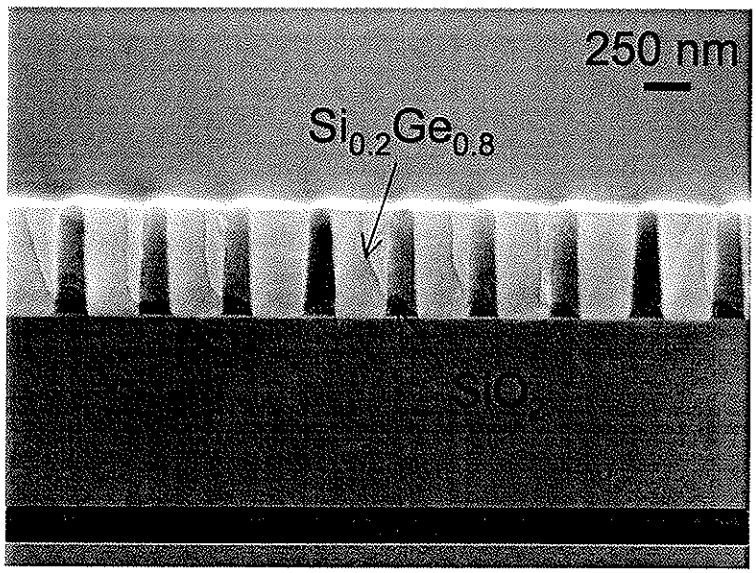


Fig. 2 (b)

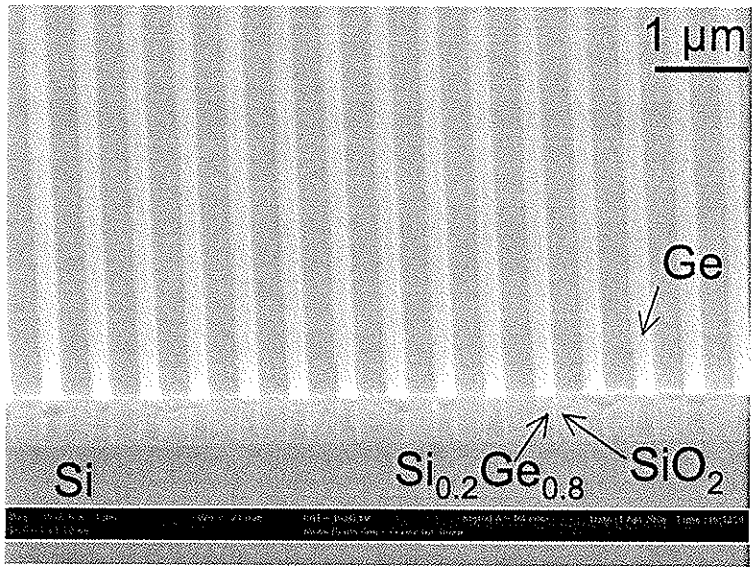


Fig. 3(a)

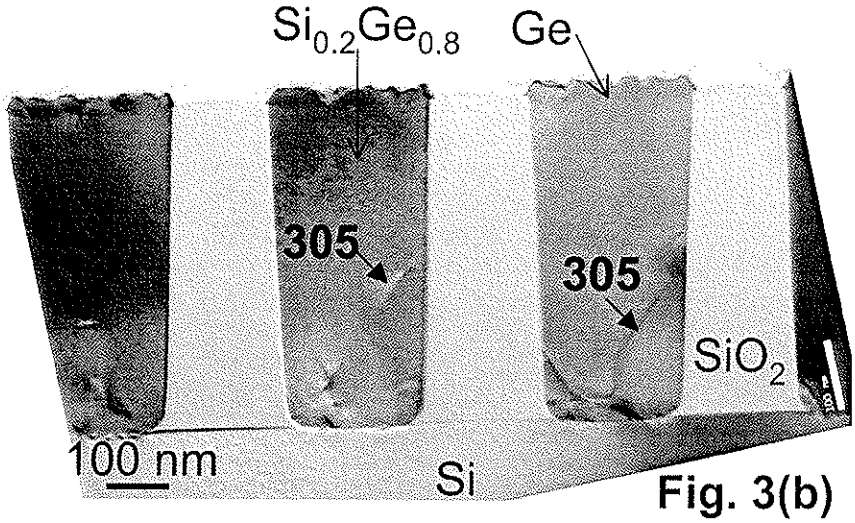


Fig. 3(b)

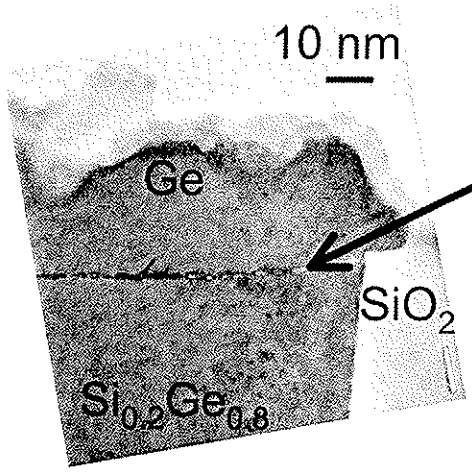


Fig. 3(c)

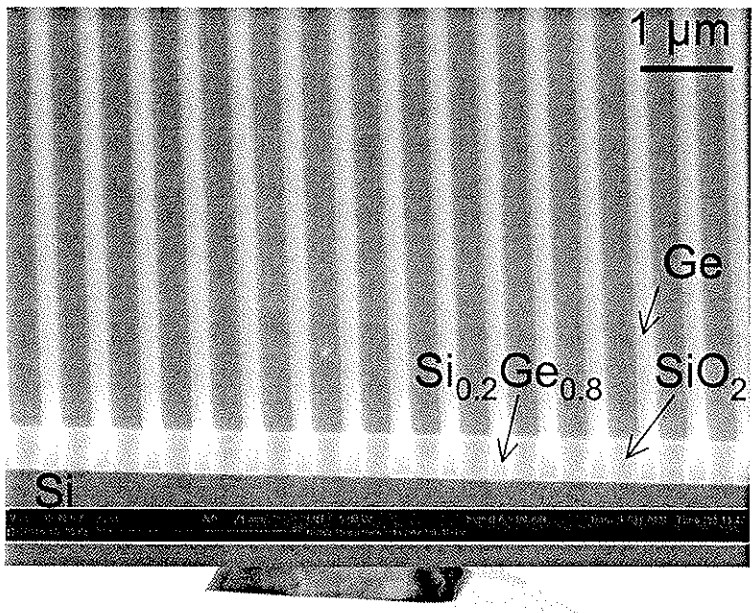


Fig. 4(a)

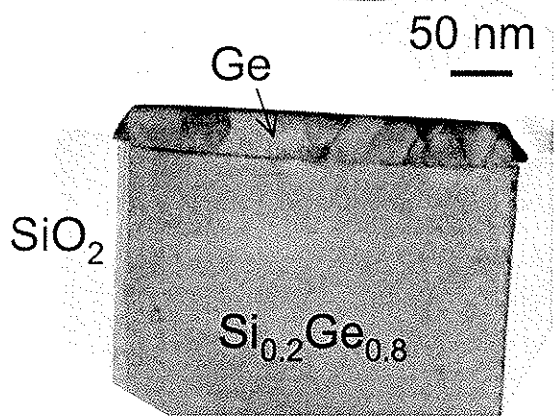


Fig. 4(b)

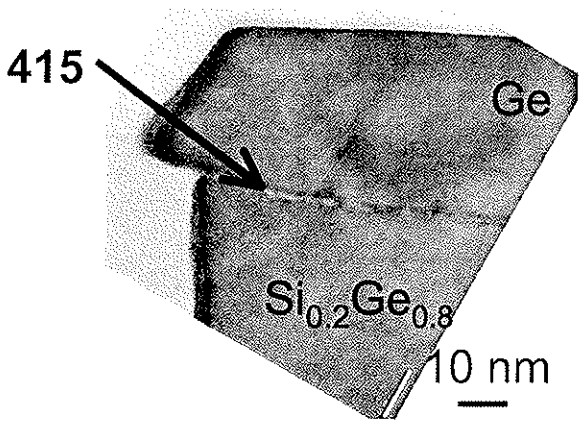


Fig. 4(c)

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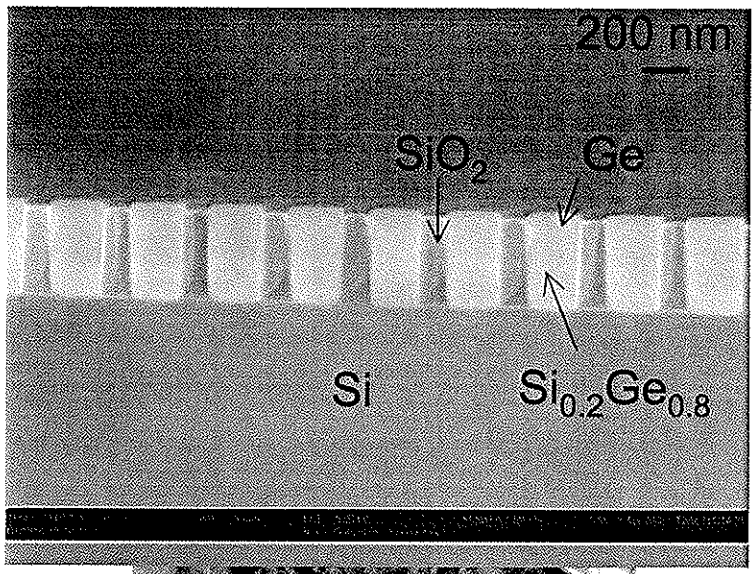


Fig. 5(a)

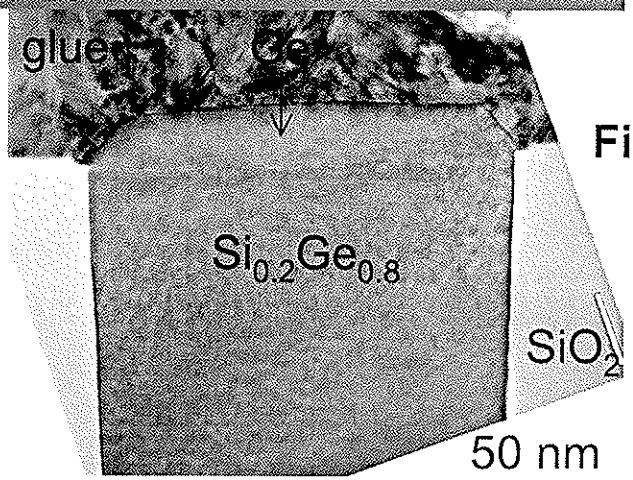


Fig. 5(b)

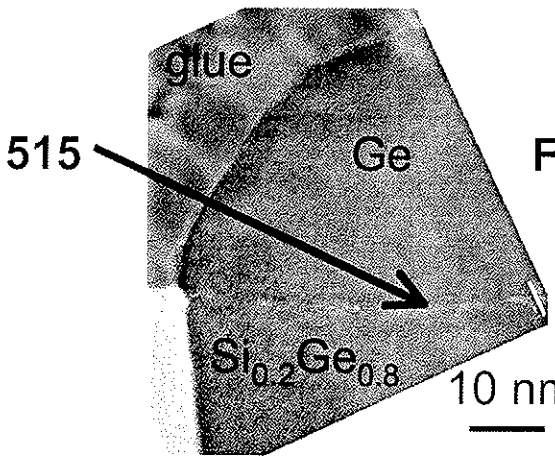


Fig. 5(c)

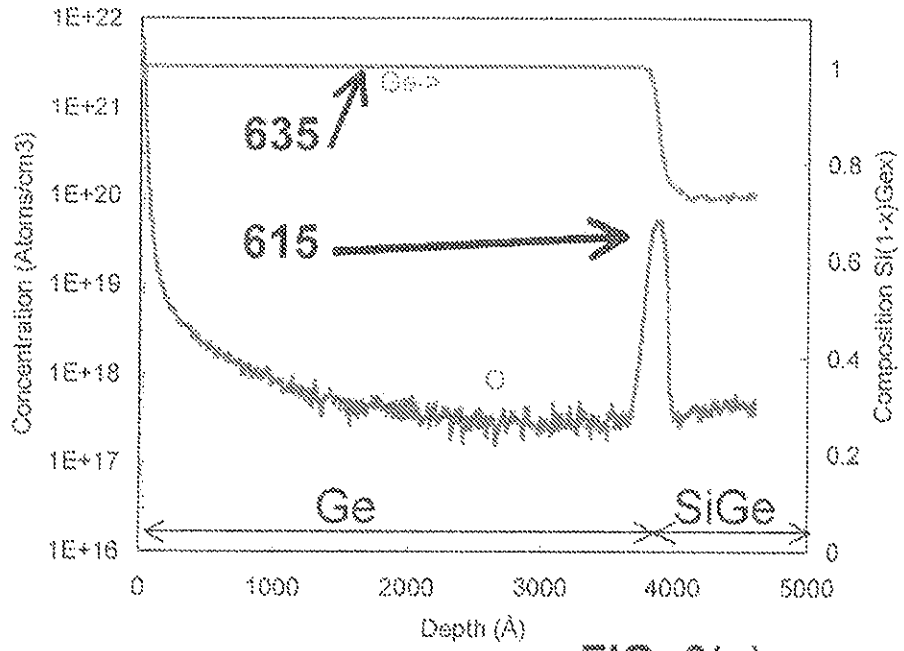

1E+22
1E+21
1E+20
1E+19
1E+18
1E+17
1E+16
Concentration (Atoms/cm3)
635
Ge->
615
O
Ge
SiGe
1
0.8
0.6
0.4
0.2
0
Composition Si(1-x)Gex
0
1000
2000
3000
4000
5000
Depth (Å)

FIG. 6(a)

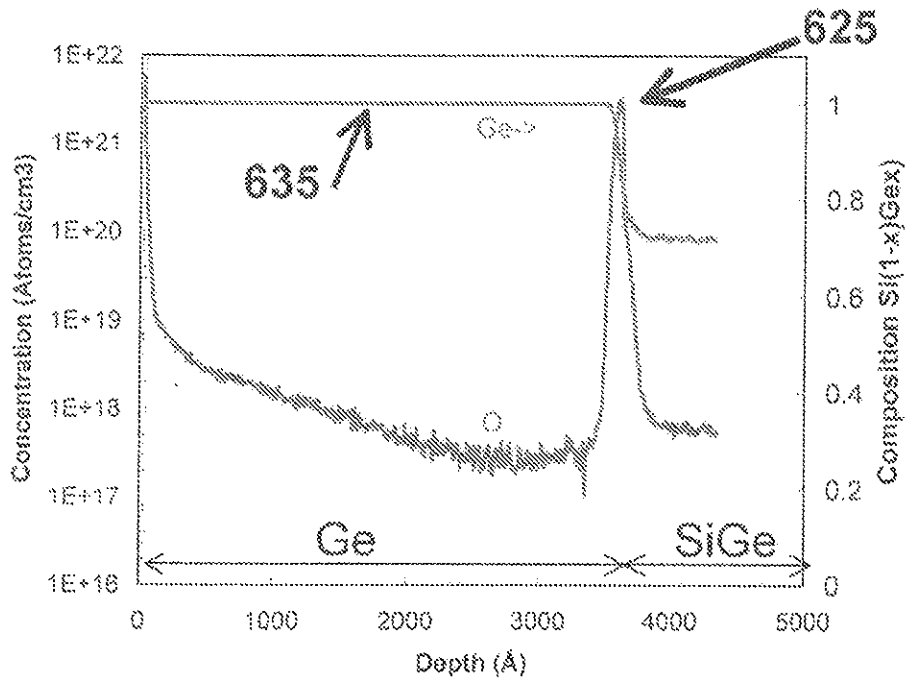

625
1E+22
1E+21
1E+20
1E+19
1E+18
1E+17
1E+16
Concentration (Atoms/cm3)
635
Ge->
O
Ge
SiGe
1
0.8
0.6
0.4
0.2
0
Composition Si(1-x)Gex
0
1000
2000
3000
4000
5000
Depth (Å)

FIG. 6(b)

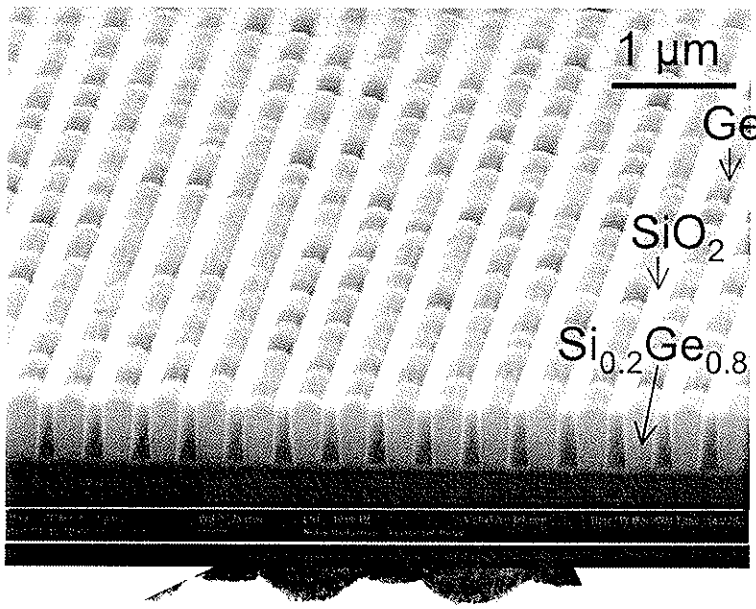


Fig. 7(a)

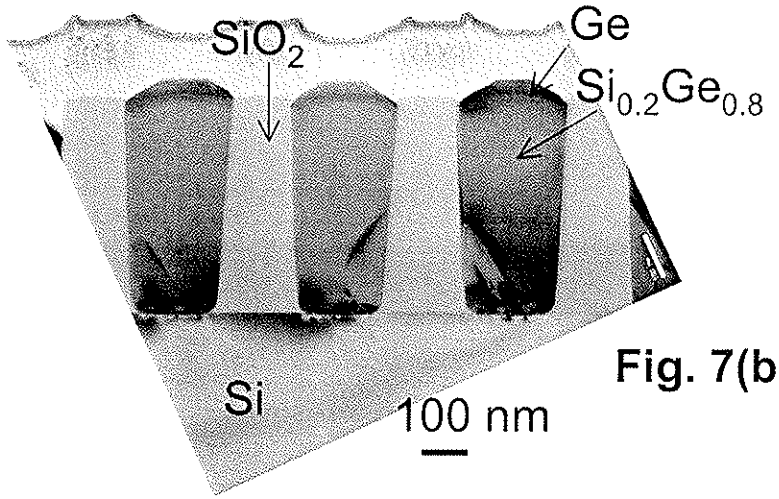


Fig. 7(b)

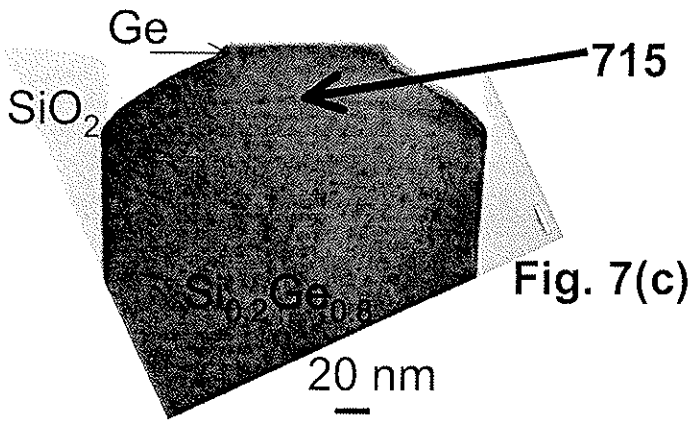


Fig. 7(c)

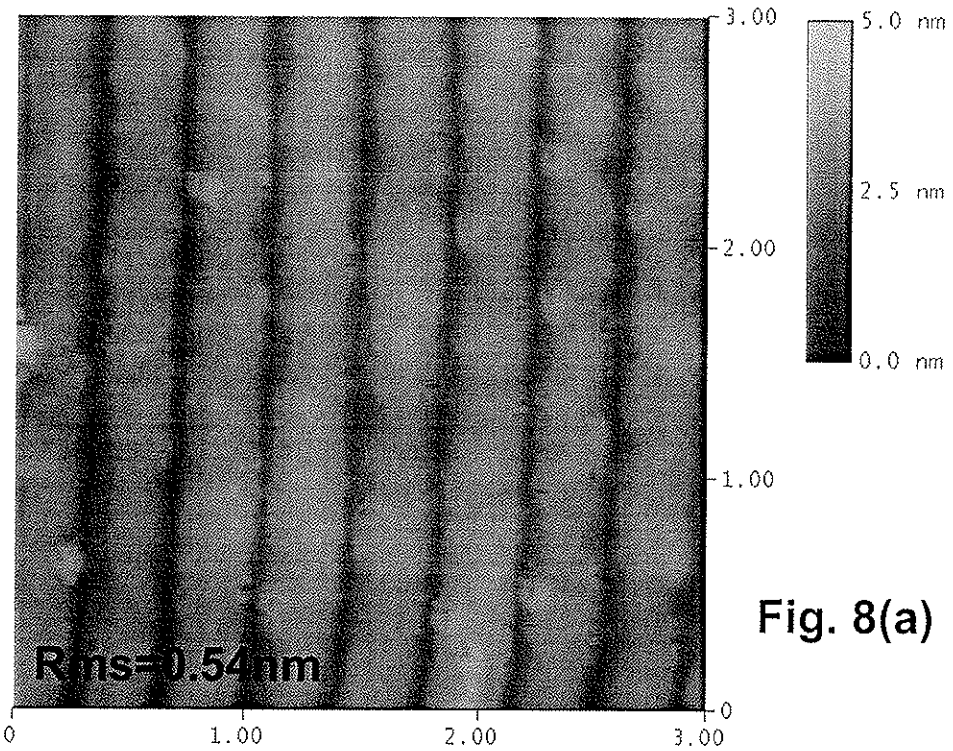

3.00
2.00
1.00
0
0
1.00
2.00
3.00
5.0 nm
2.5 nm
0.0 nm
Rms=0.54nm

Fig. 8(a)

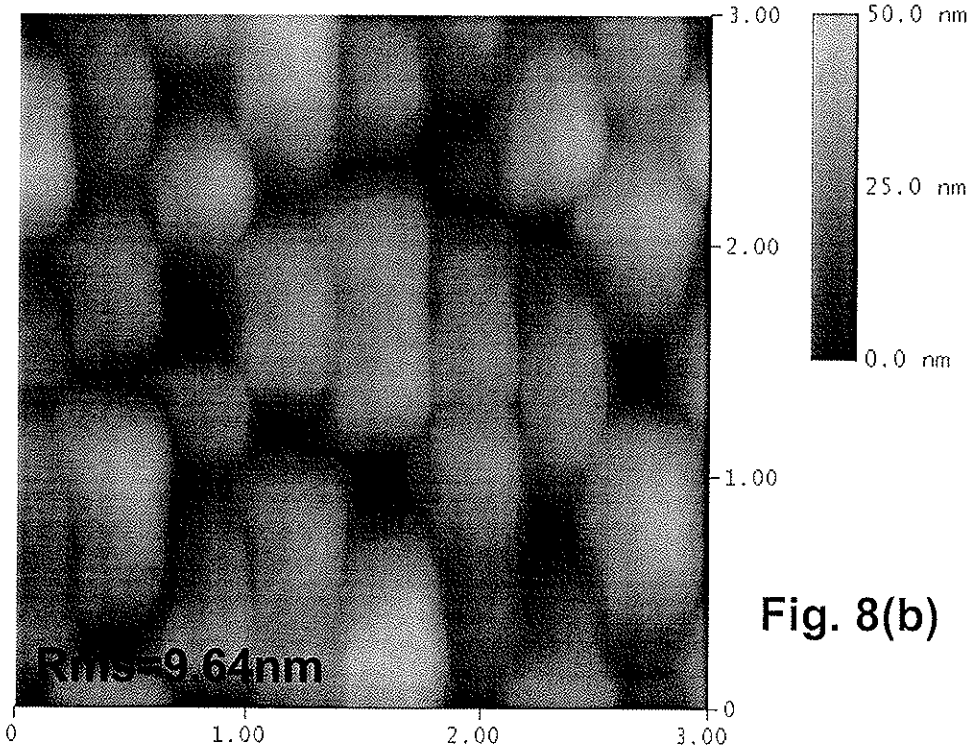

3.00
2.00
1.00
0
0
1.00
2.00
3.00
50.0 nm
25.0 nm
0.0 nm
Rms=9.64nm

Fig. 8(b)

FIG. 9(a)

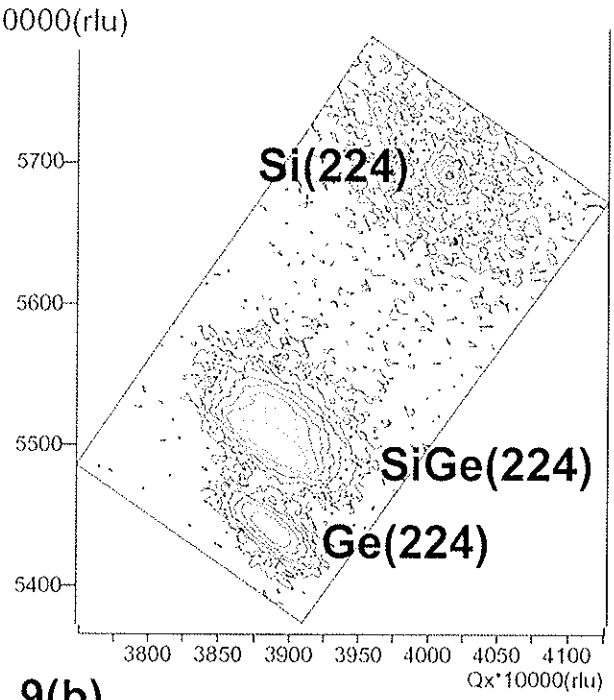
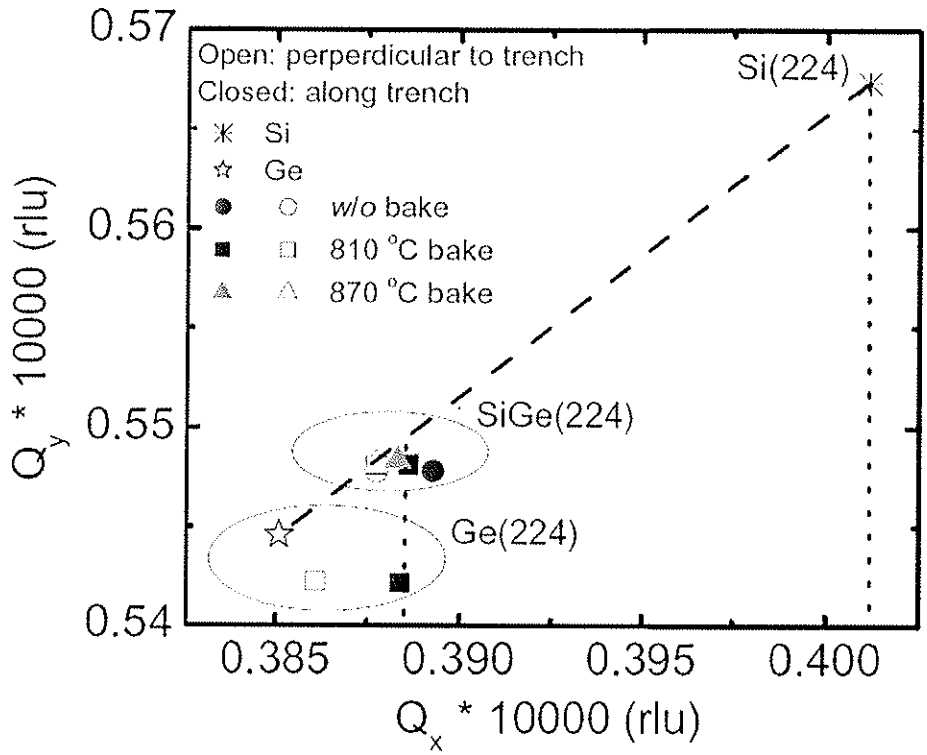

Qy*10000(rlu)
5700
5600
5500
5400
Si(224)
SiGe(224)
Ge(224)
3800
3850
3900
3950
4000
4050
4100
Qx*10000(rlu)

FIG. 9(b)


0.57
0.56
0.55
0.54
Open: perperdicular to trench
Closed: along trench
Si
Ge
w/o bake
810 °C bake
870 °C bake
Si(224)
SiGe(224)
Ge(224)
0.385
0.390
0.395
0.400
Q_y * 10000 (rlu)
Q_x * 10000 (rlu)