FIG. 1A

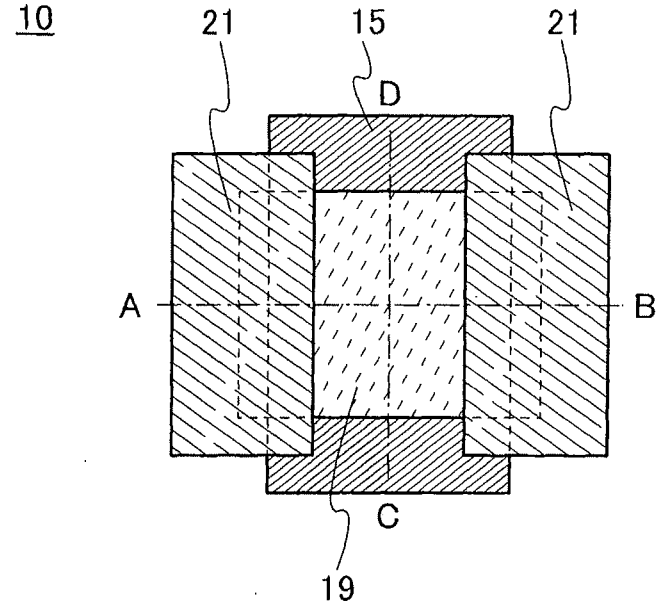


FIG. 1B

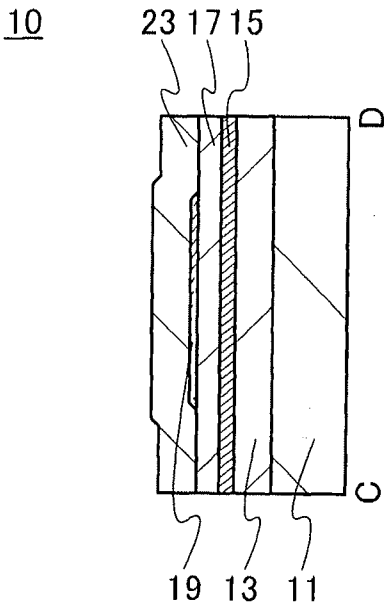


FIG. 1C

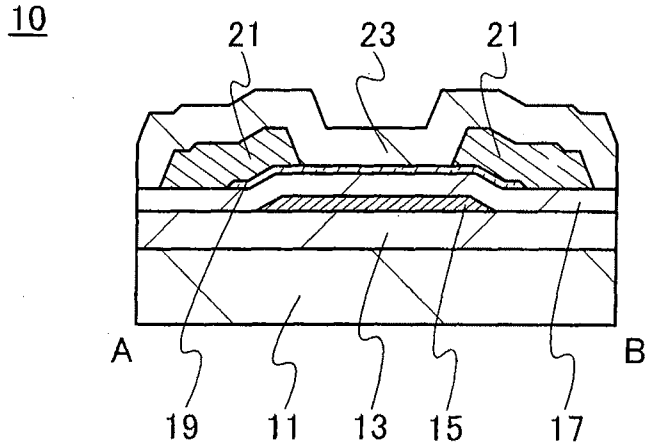


FIG. 2A

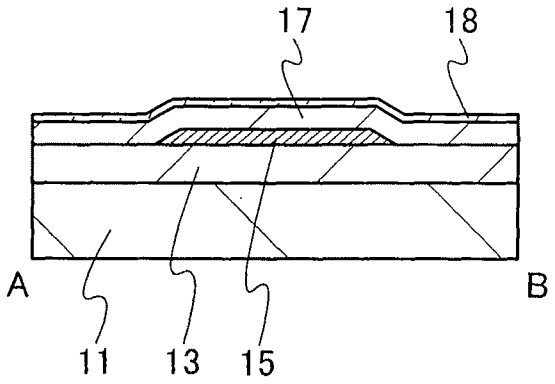


FIG. 2B

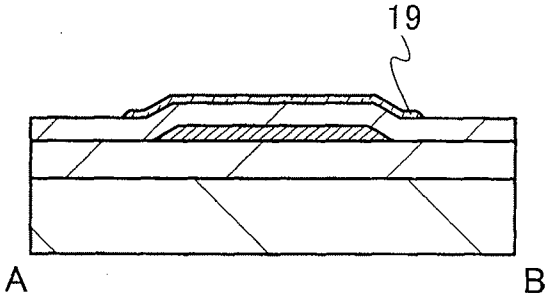


FIG. 2C

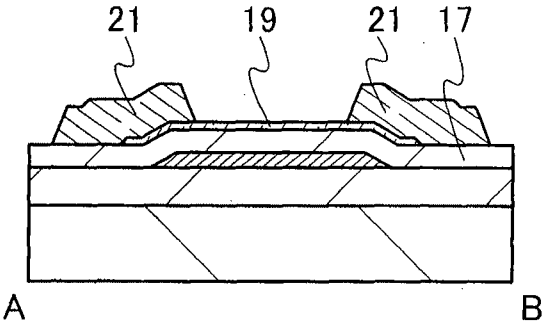


FIG. 2D

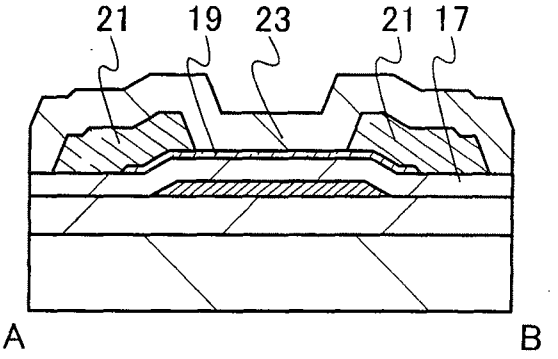


FIG. 3

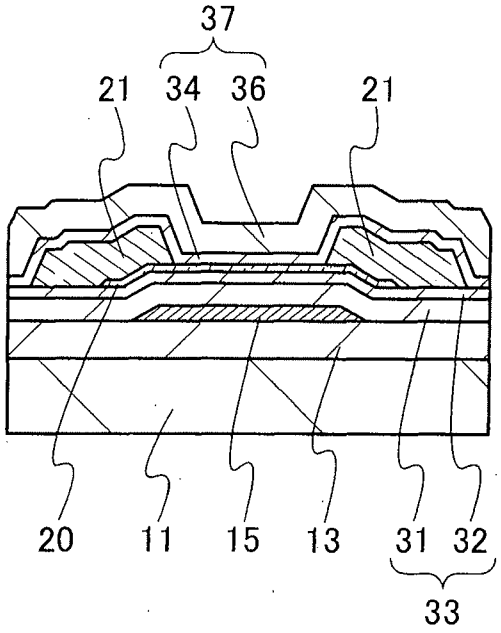


FIG. 4A

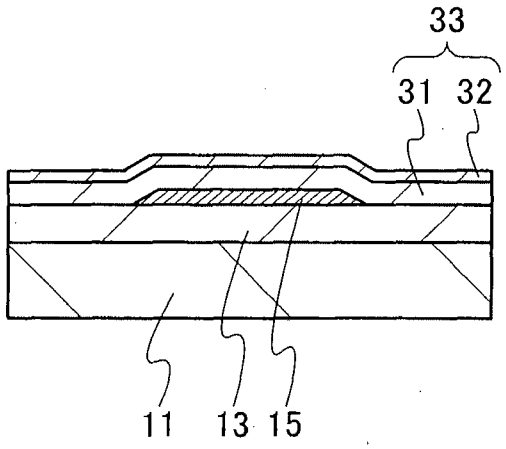


FIG. 4B

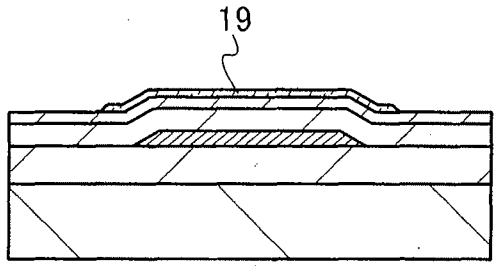


FIG. 4C

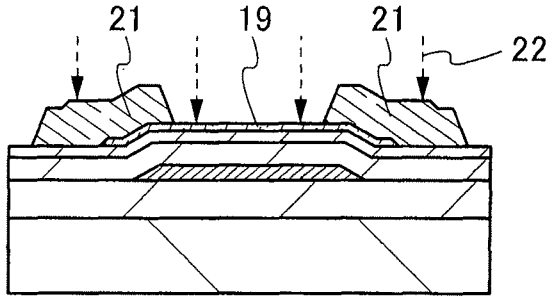


FIG. 4D

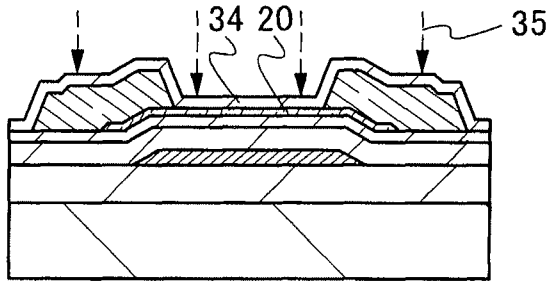


FIG. 4E

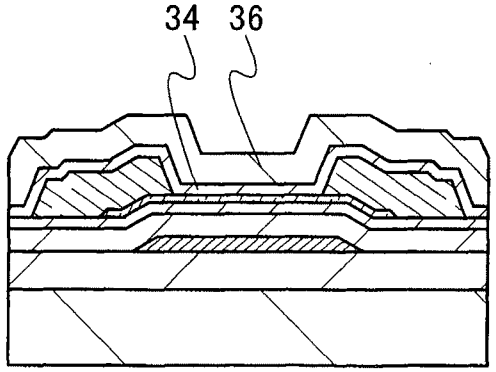


FIG. 5A

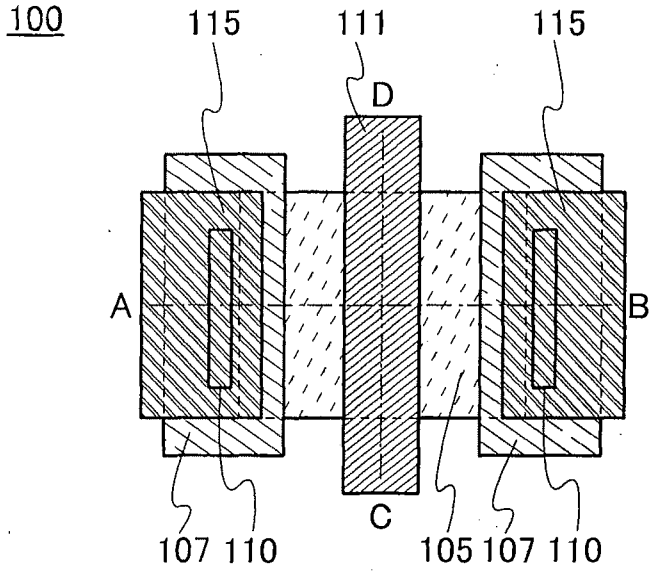


FIG. 5C

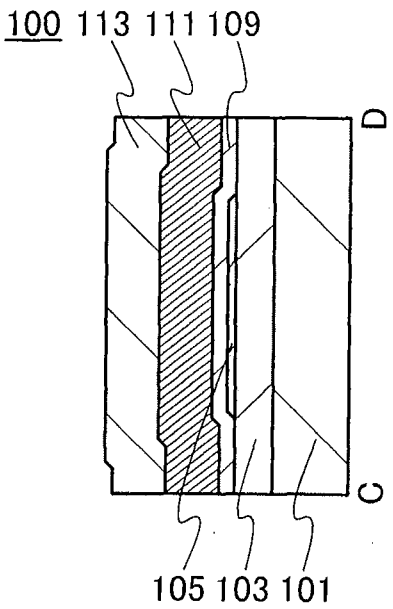


FIG. 5B

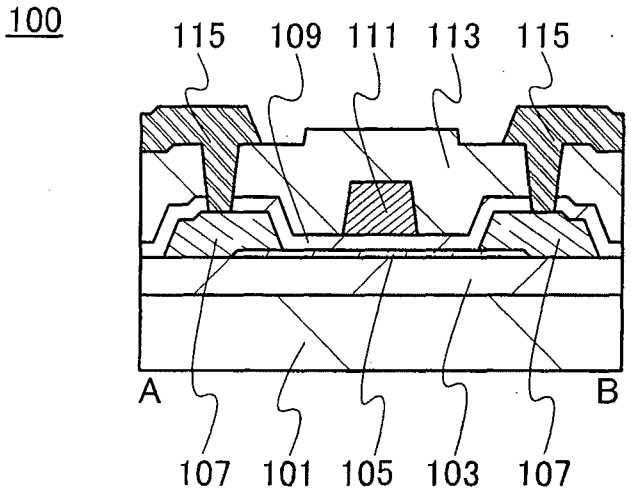


FIG. 6A

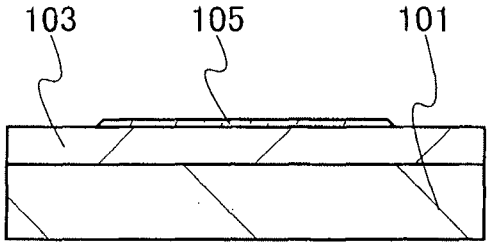


FIG. 6B

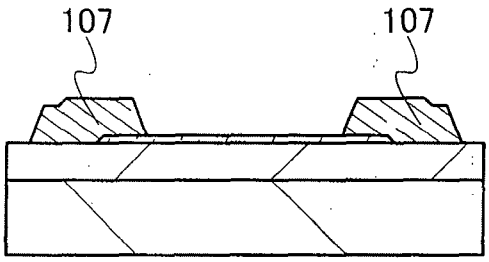


FIG. 6C

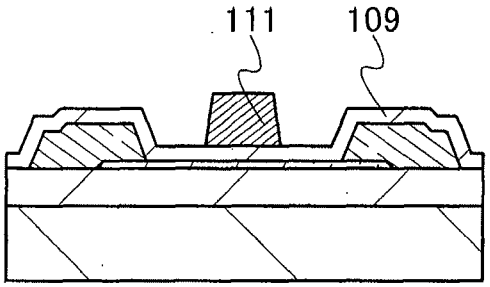


FIG. 6D

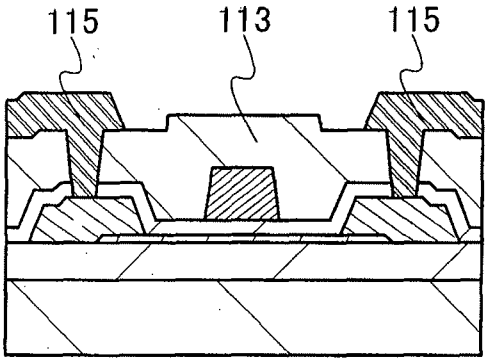


FIG. 7A

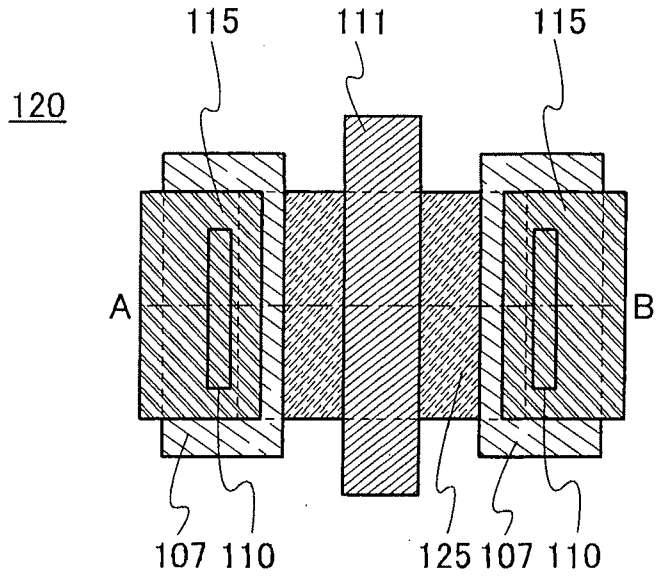

115
111
115
120
A
B
107
110
125
107
110

FIG. 7B

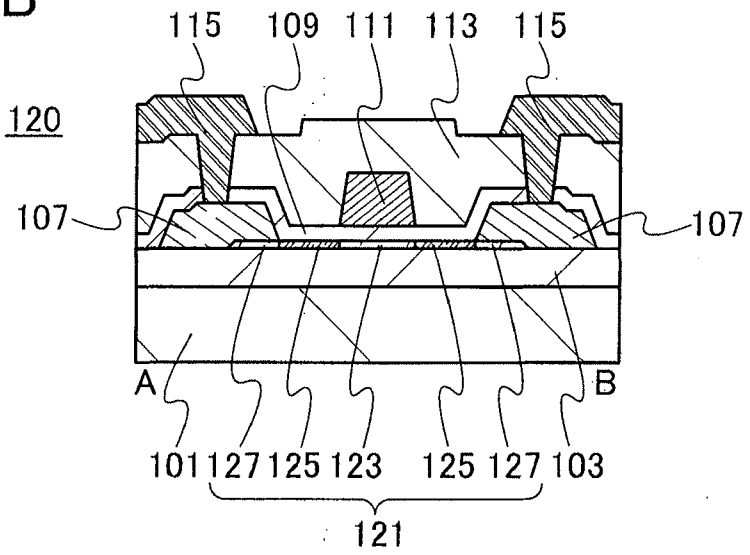

115
109
111
113
115
120
107
107
A
B
101
127
125
123
125
127
103
121

FIG. 8A

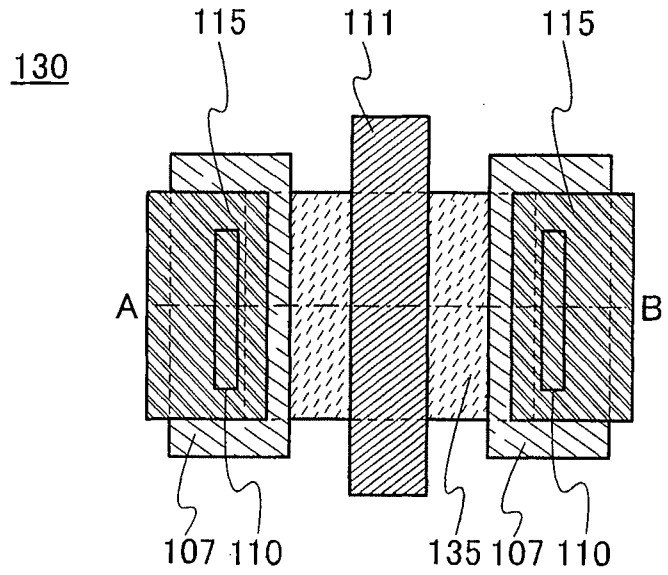

130
115
111
115
A
B
107
110
135
107
110

FIG. 8B

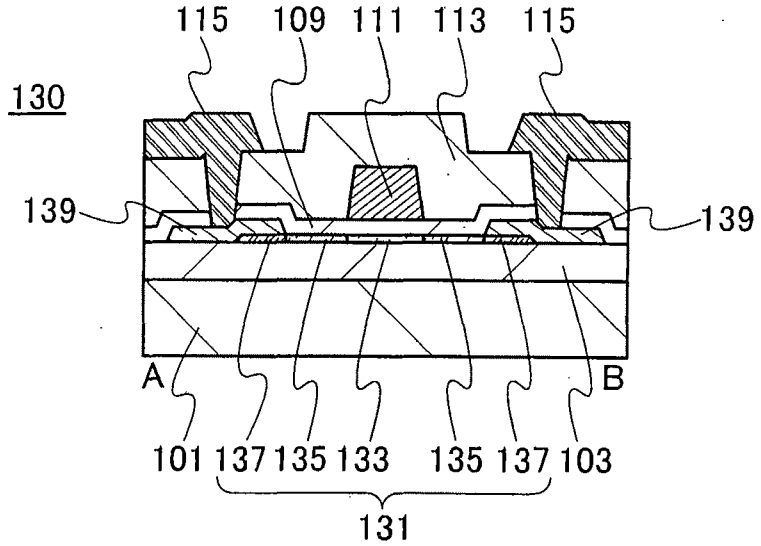

130
115
109
111
113
115
139
139
A
B
101
137
135
133
135
137
103
131

FIG. 9A

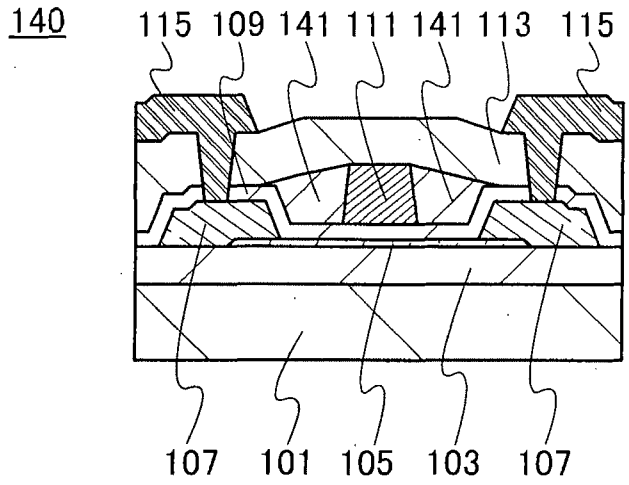


FIG. 9B

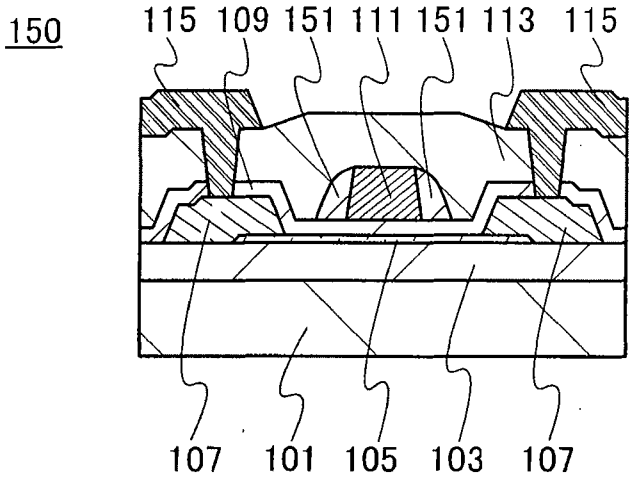


FIG. 9C

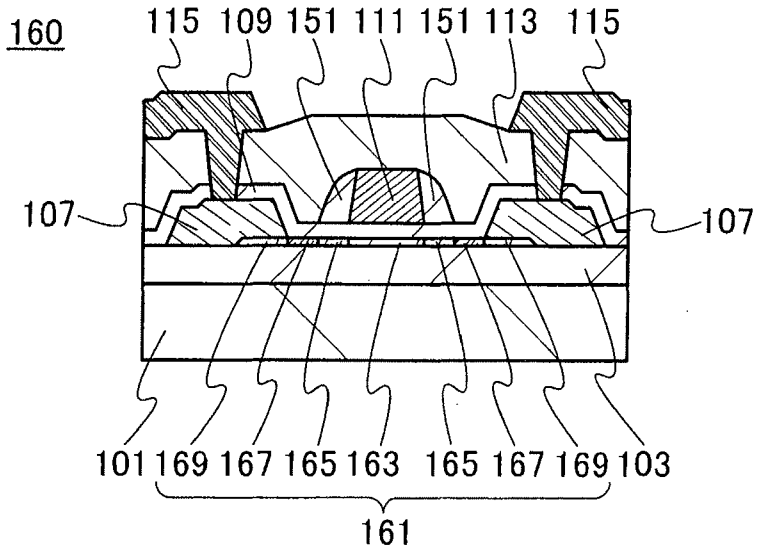


FIG. 10

170

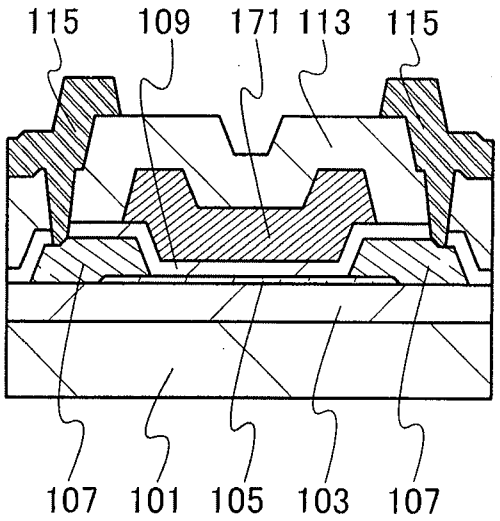


FIG. 11A

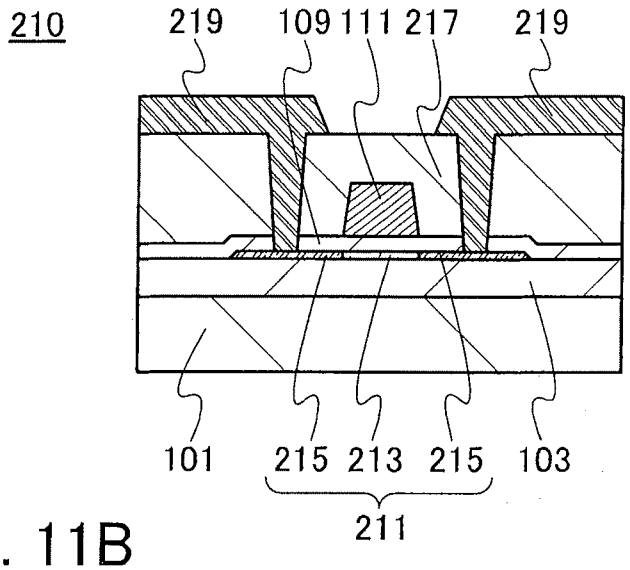


FIG. 11B

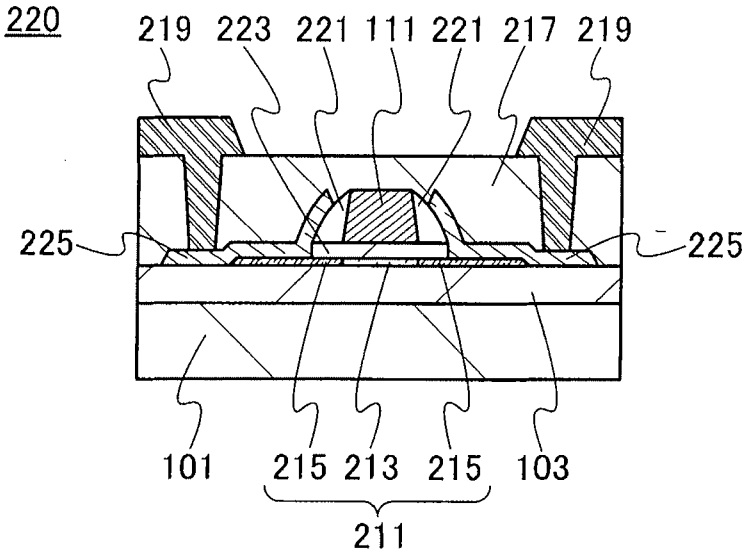


FIG. 12

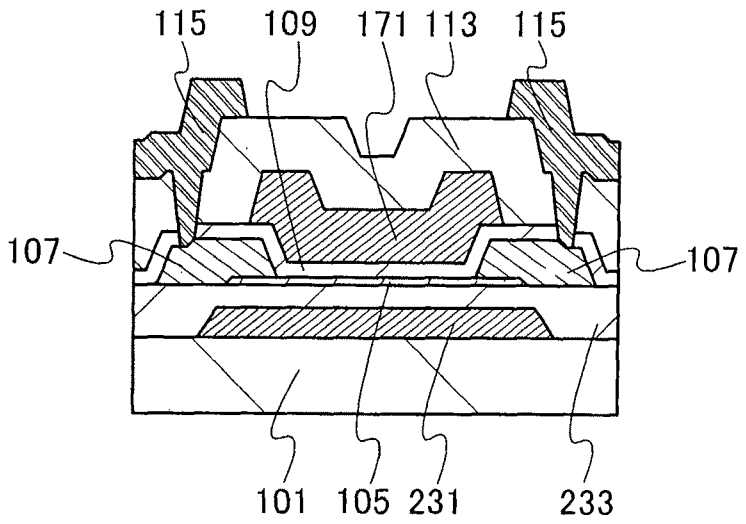


FIG. 13

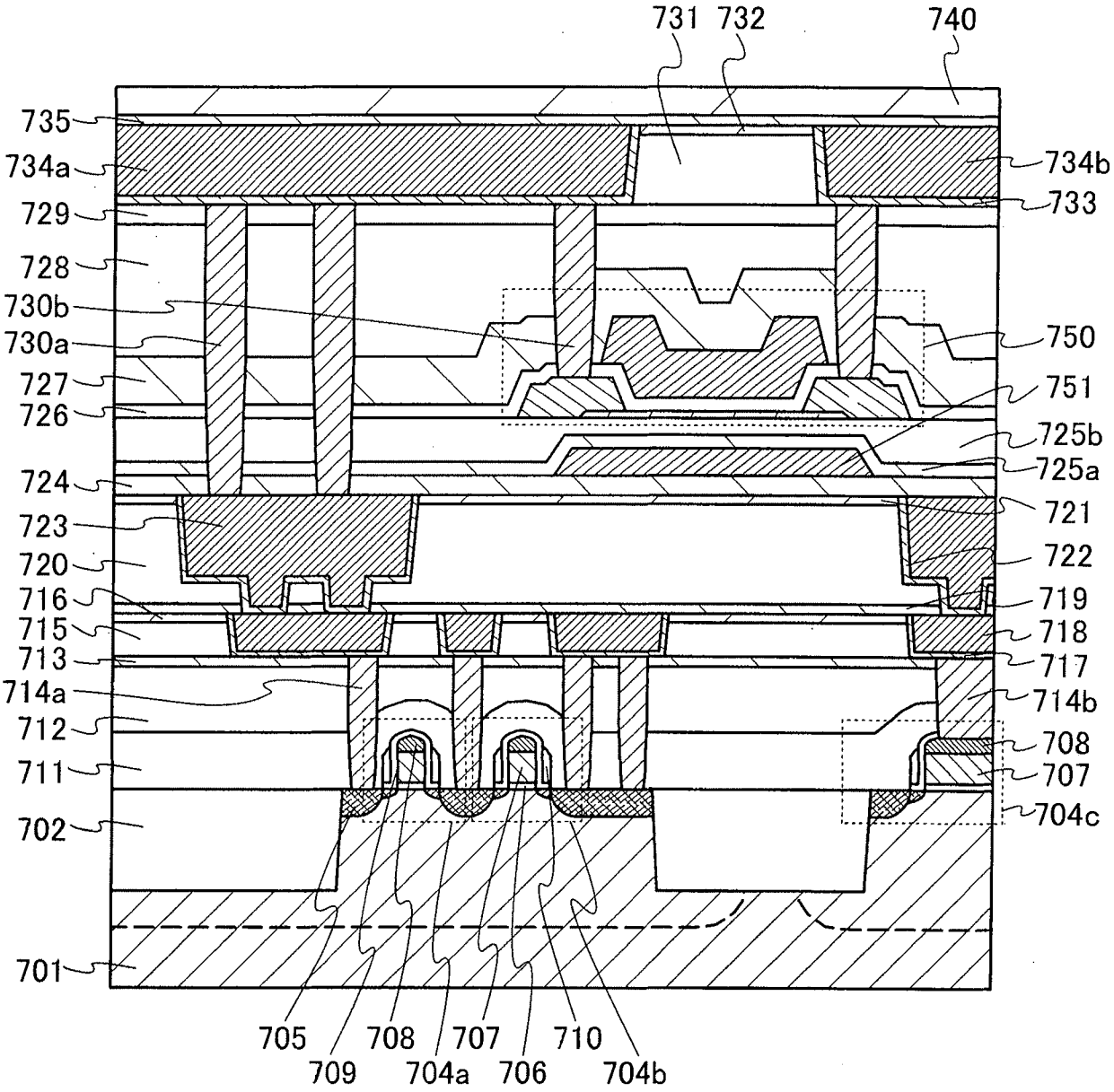

731
732
740
735
734a
734b
729
733
728
730b
730a
750
727
751
726
725b
725a
724
721
723
722
720
719
716
718
715
717
713
714b
714a
708
712
707
711
704c
702
701
705
708
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710
709
704a
706
704b

FIG. 14A

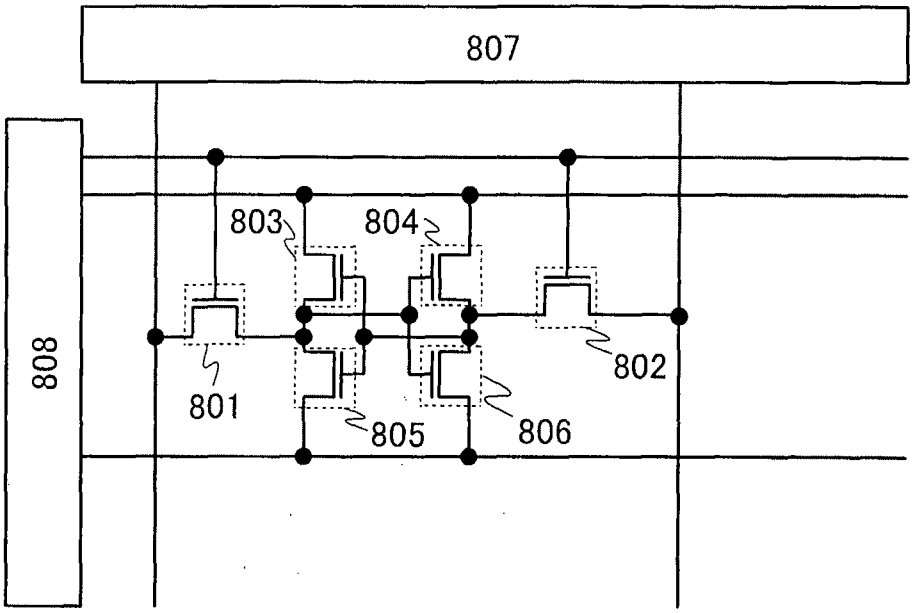


FIG. 14B

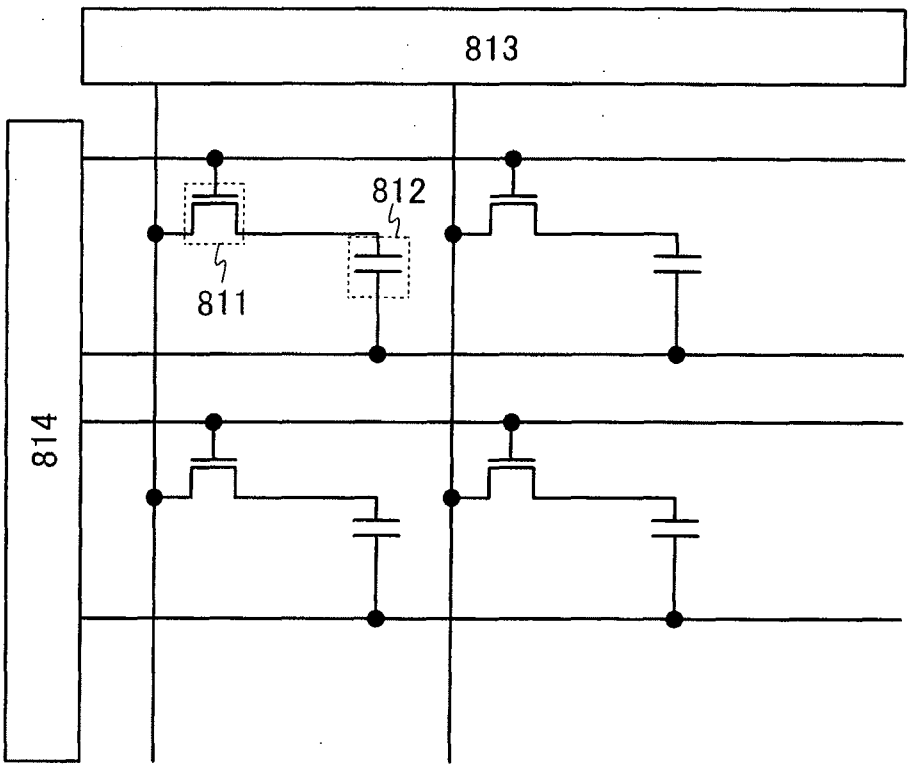


FIG. 15

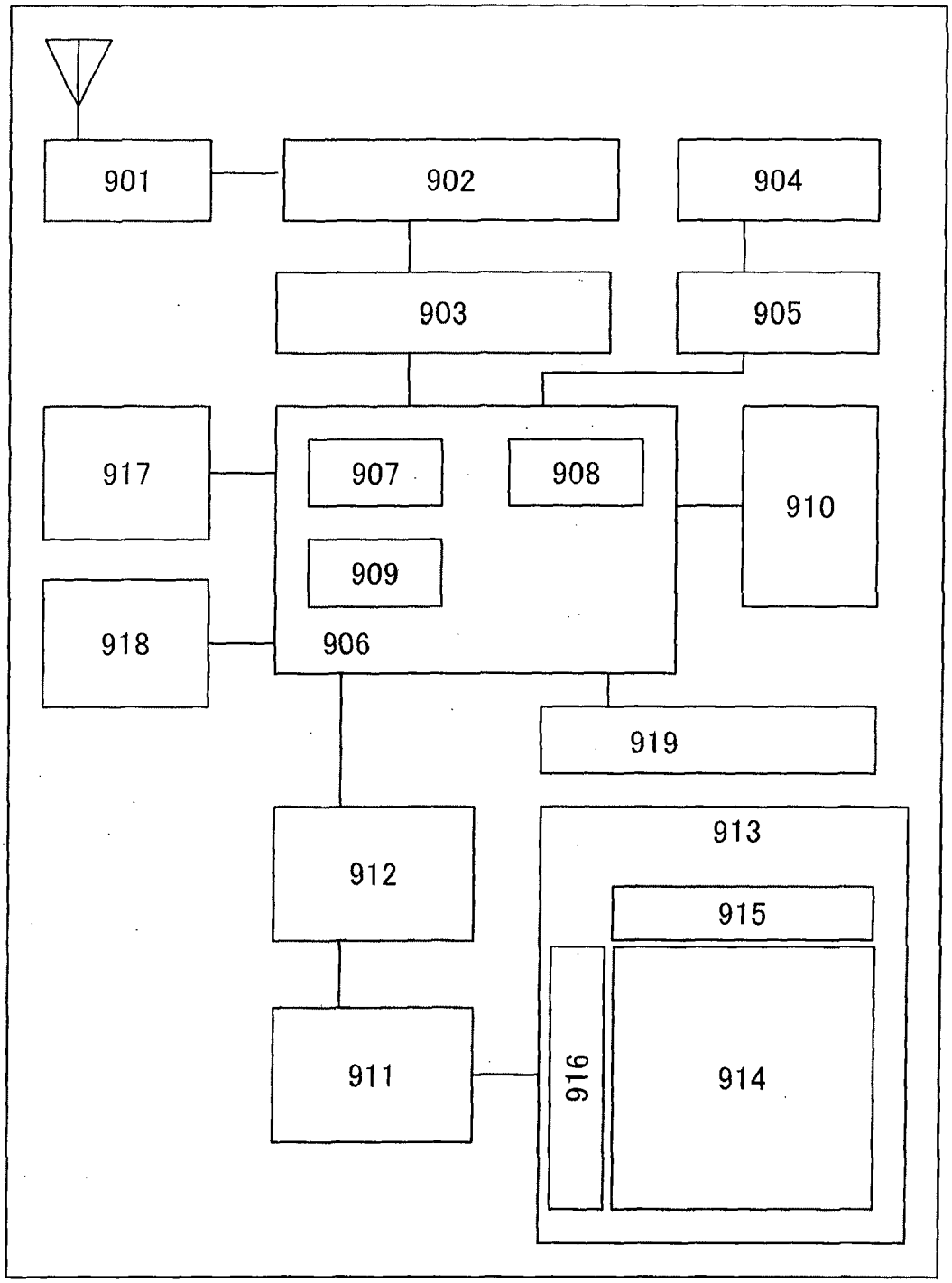

901
902
904
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905
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918
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919
912
913
915
916
914
911

FIG. 16

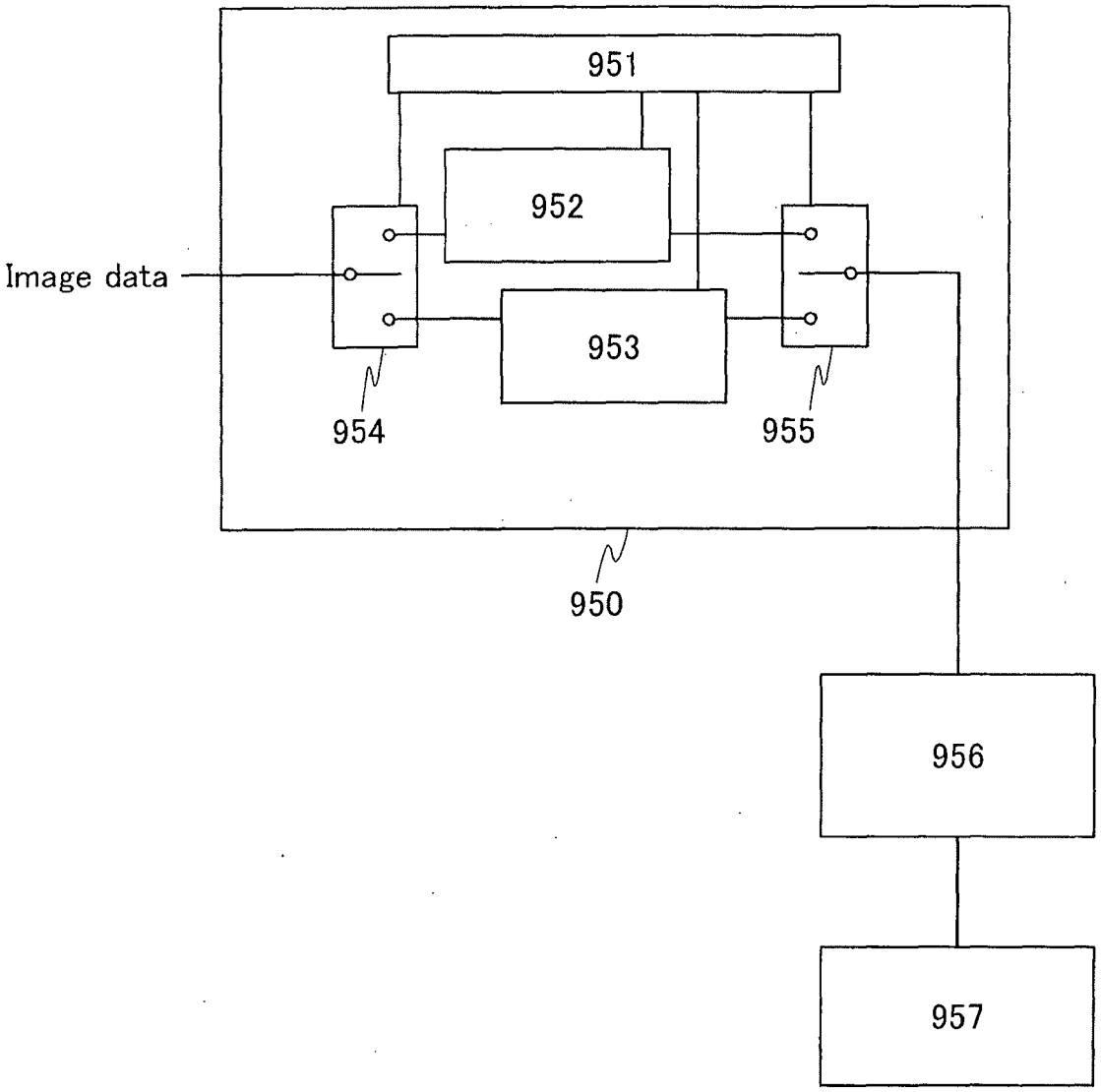


FIG. 17

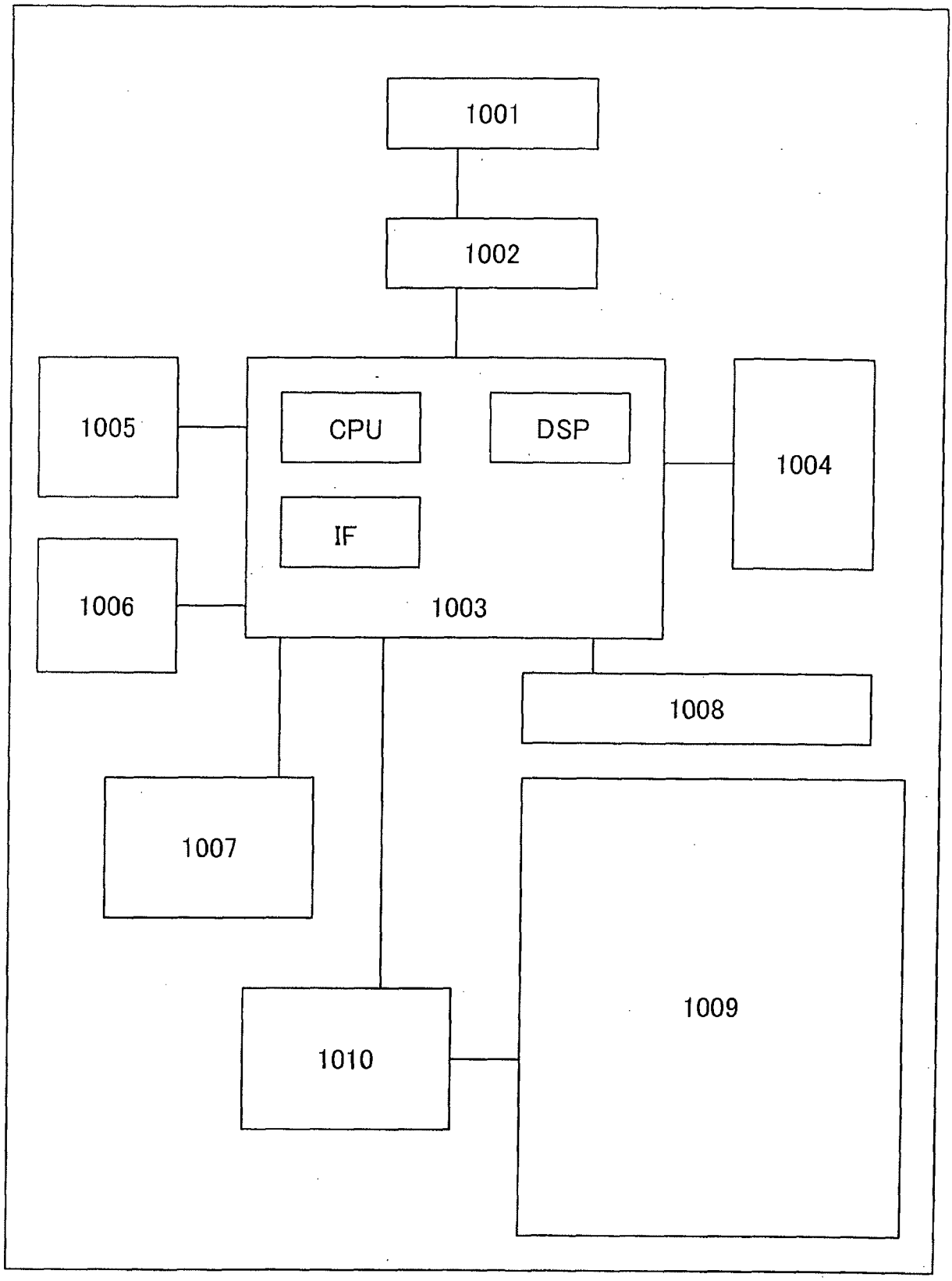


FIG. 18

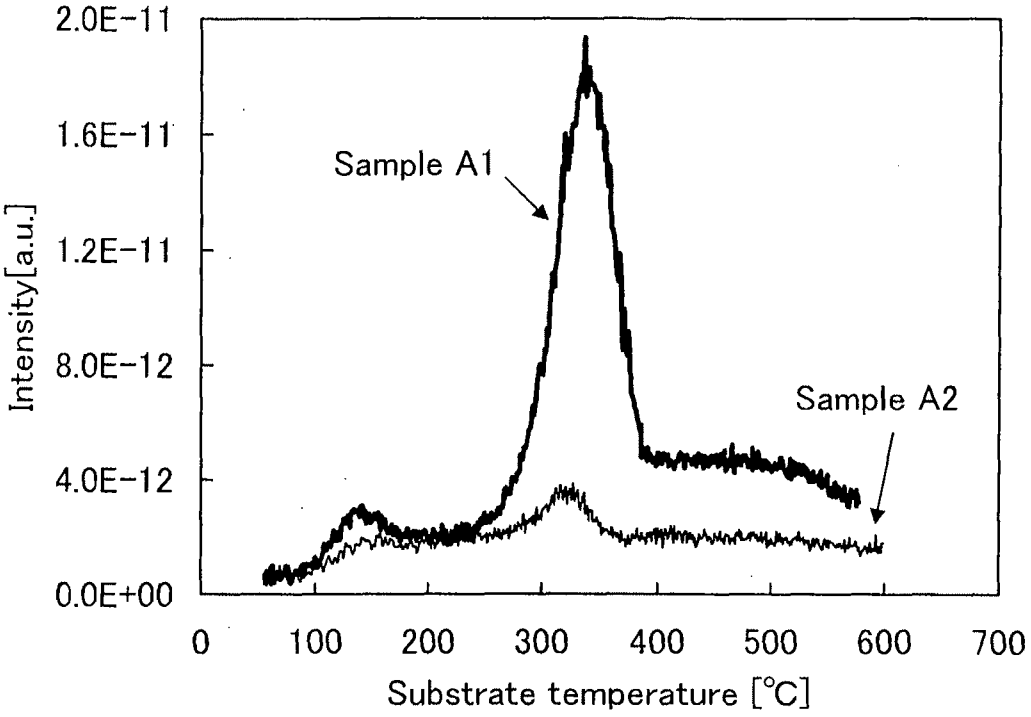

2.0E-11
1.6E-11
1.2E-11
8.0E-12
4.0E-12
0.0E+00
Intensity[a.u.]
Sample A1
Sample A2
0
100
200
300
400
500
600
700
Substrate temperature [°C]

FIG. 19A

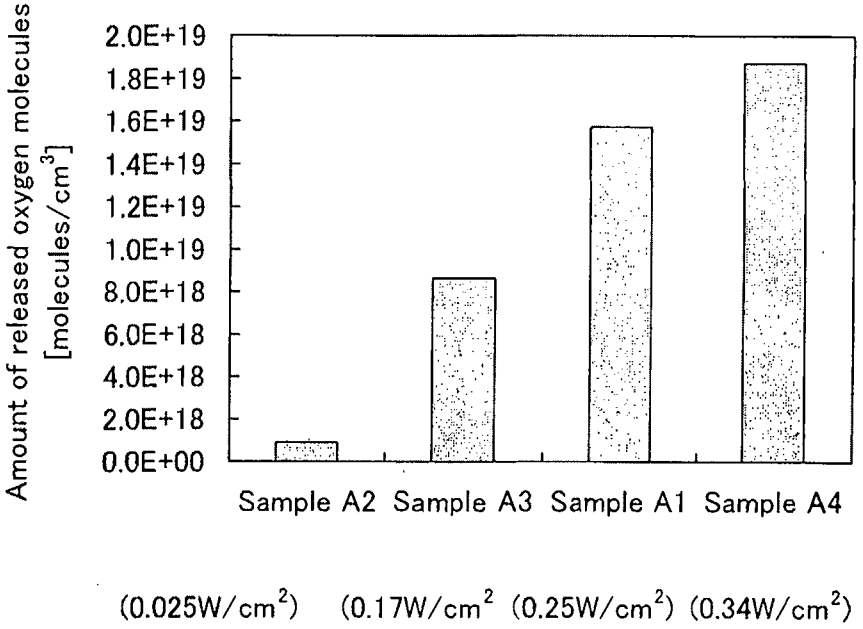


FIG. 19B

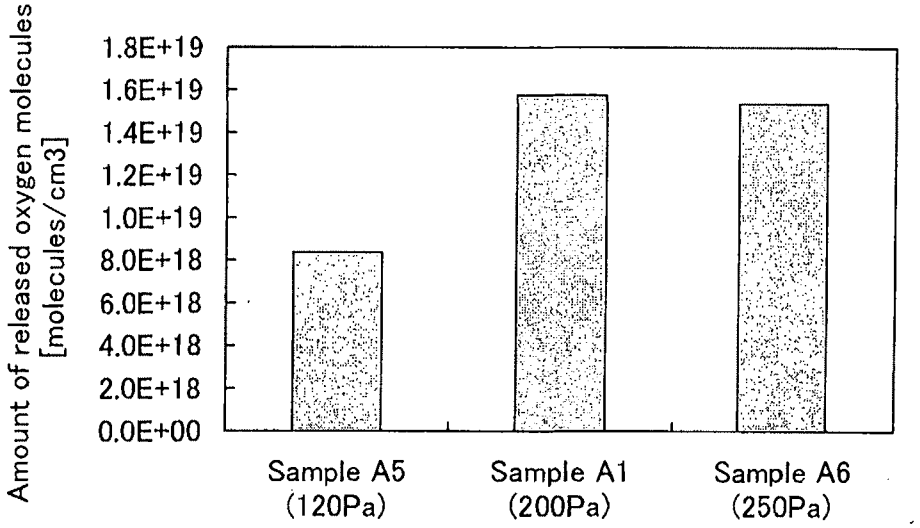


FIG. 20A

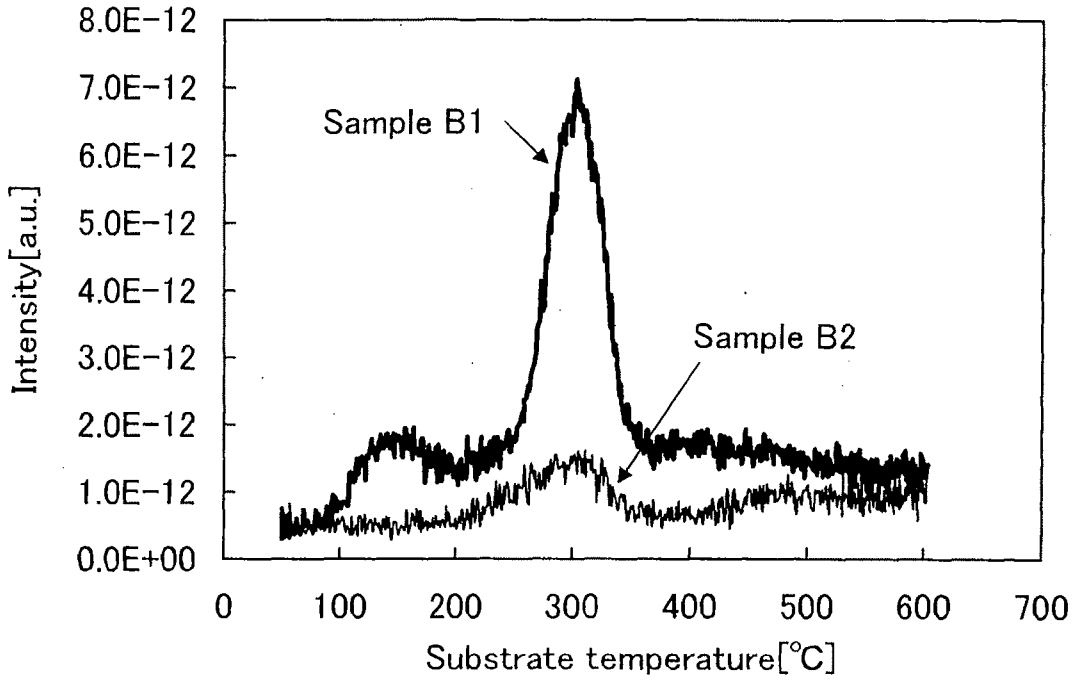


FIG. 20B

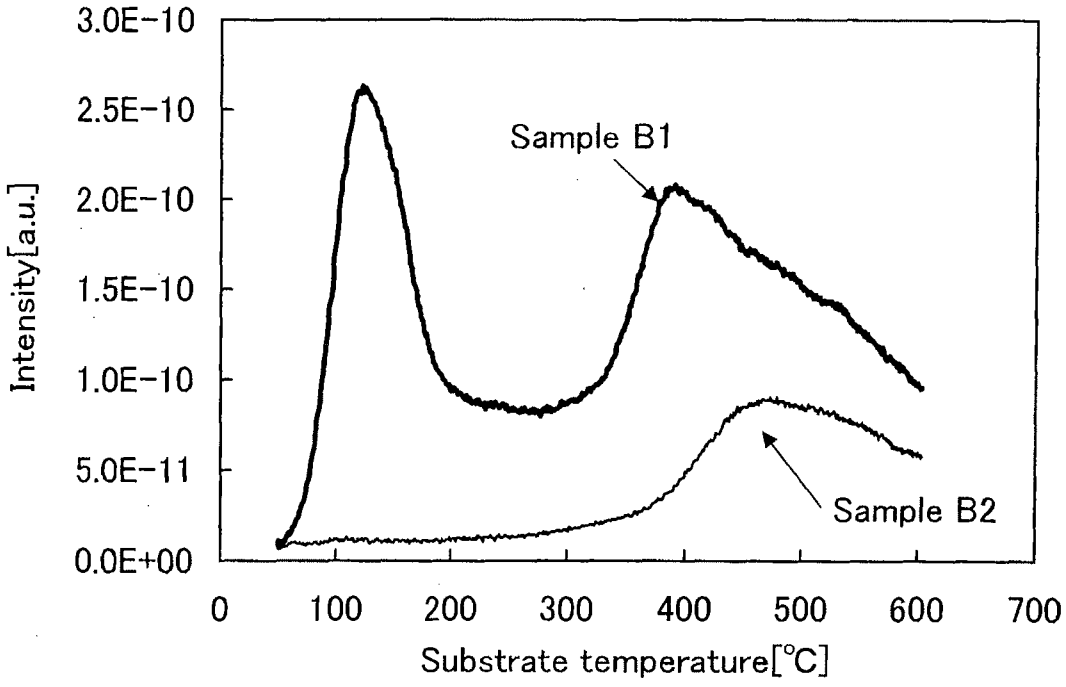


FIG. 21

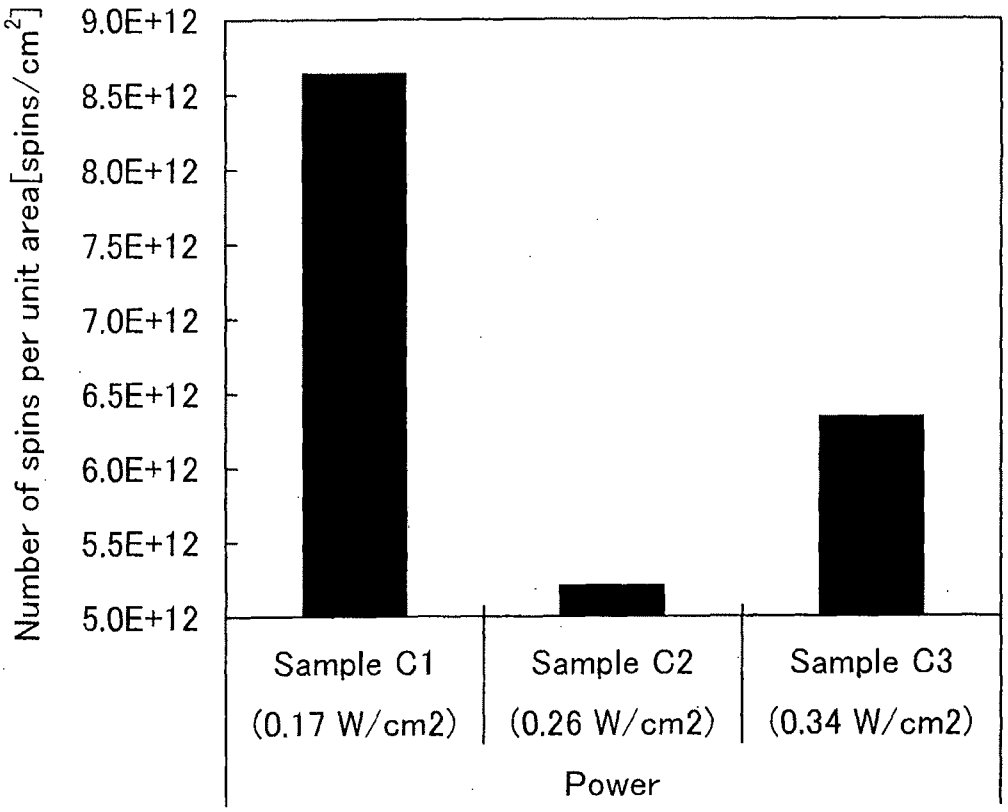

Number of spins per unit area[spins/cm2]
9.0E+12
8.5E+12
8.0E+12
7.5E+12
7.0E+12
6.5E+12
6.0E+12
5.5E+12
5.0E+12
Sample C1
(0.17 W/cm2)
Sample C2
(0.26 W/cm2)
Sample C3
(0.34 W/cm2)
Power

FIG. 22

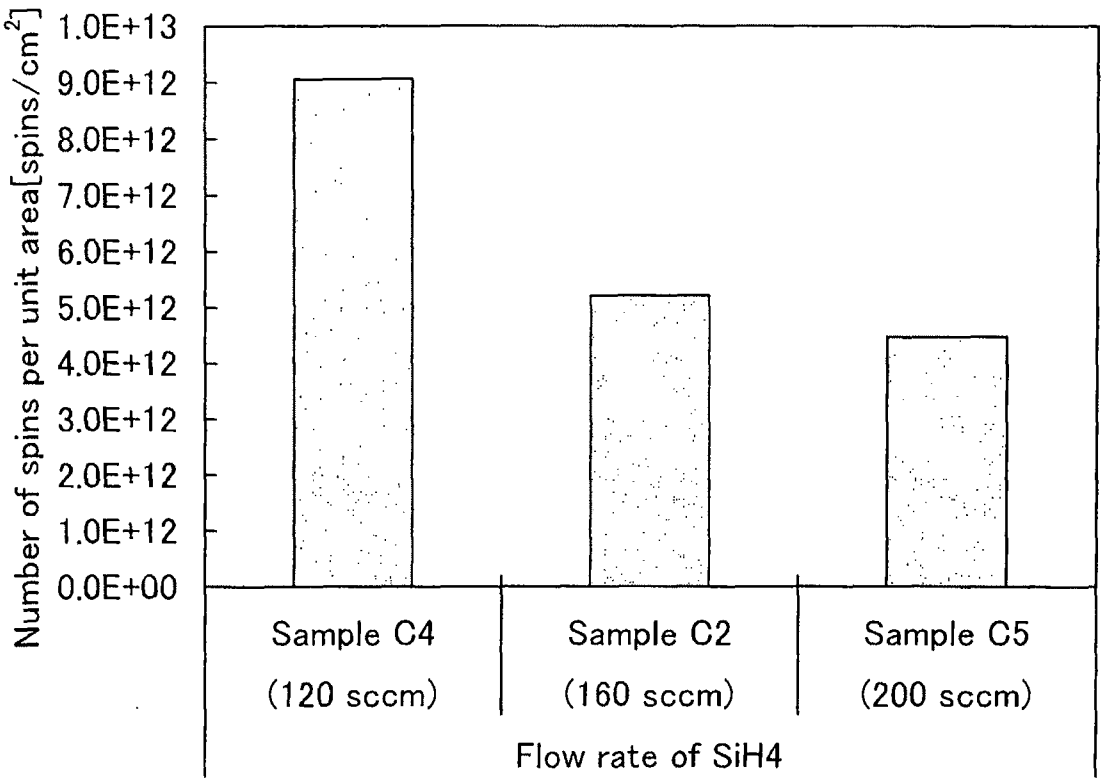

Number of spins per unit area[spins/cm2]
1.0E+13
9.0E+12
8.0E+12
7.0E+12
6.0E+12
5.0E+12
4.0E+12
3.0E+12
2.0E+12
1.0E+12
0.0E+00
Sample C4
(120 sccm)
Sample C2
(160 sccm)
Sample C5
(200 sccm)
Flow rate of SiH4

FIG. 23

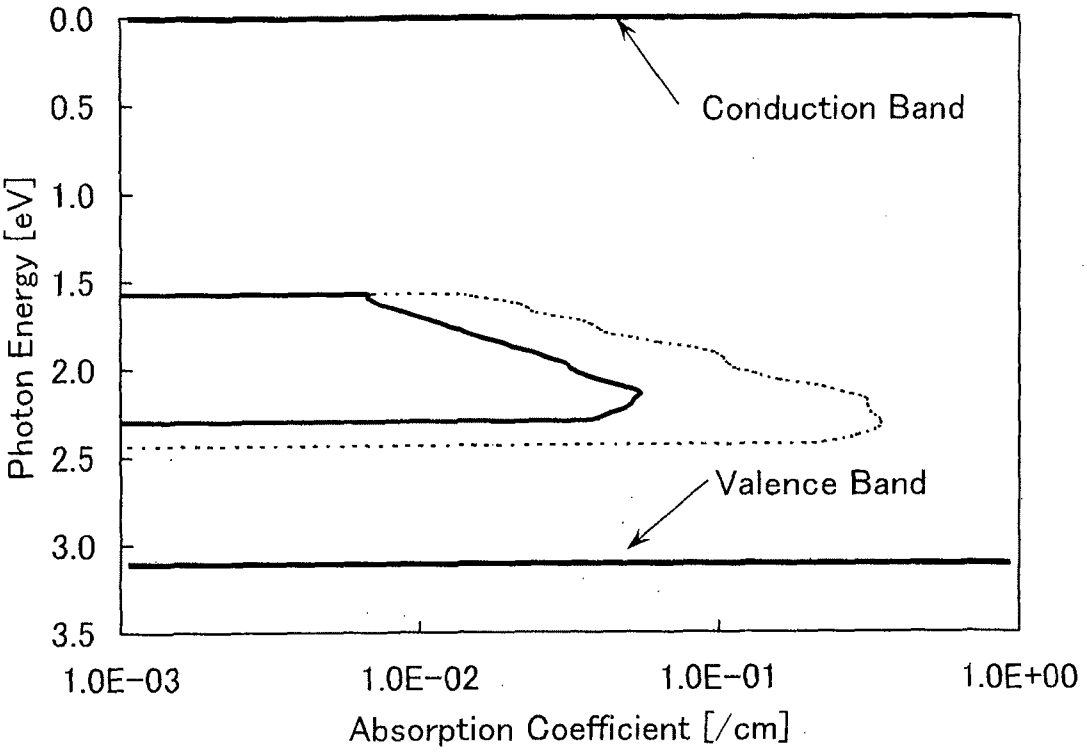

0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Photon Energy [eV]
Conduction Band
Valence Band
1.0E-03
1.0E-02
1.0E-01
1.0E+00
Absorption Coefficient [/cm]

FIG. 24A

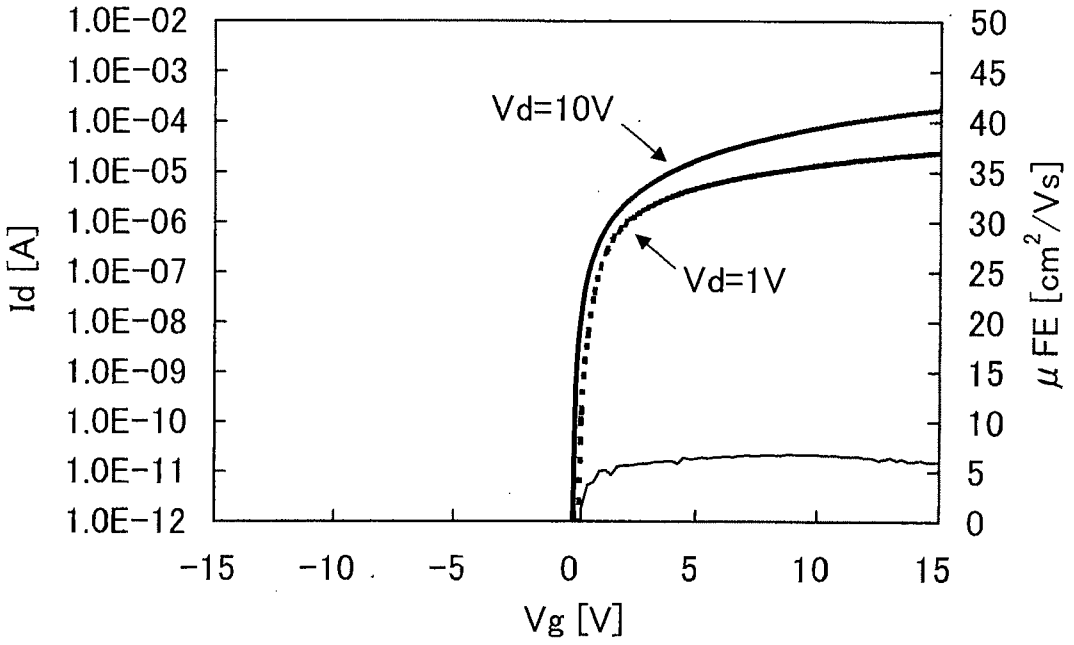


FIG. 24B

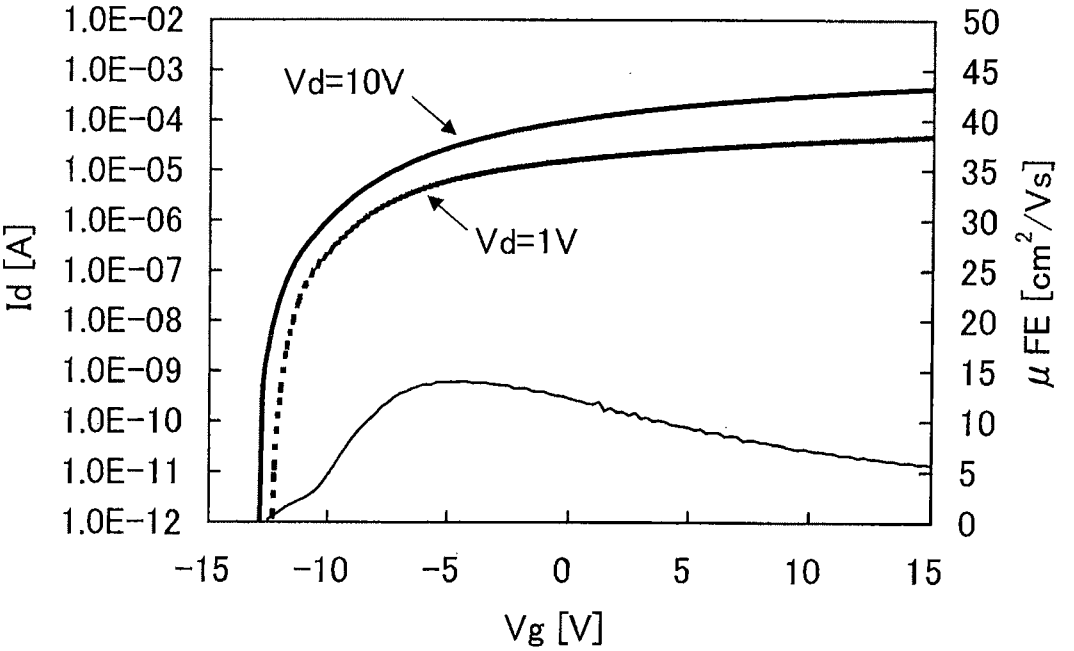


FIG. 25A

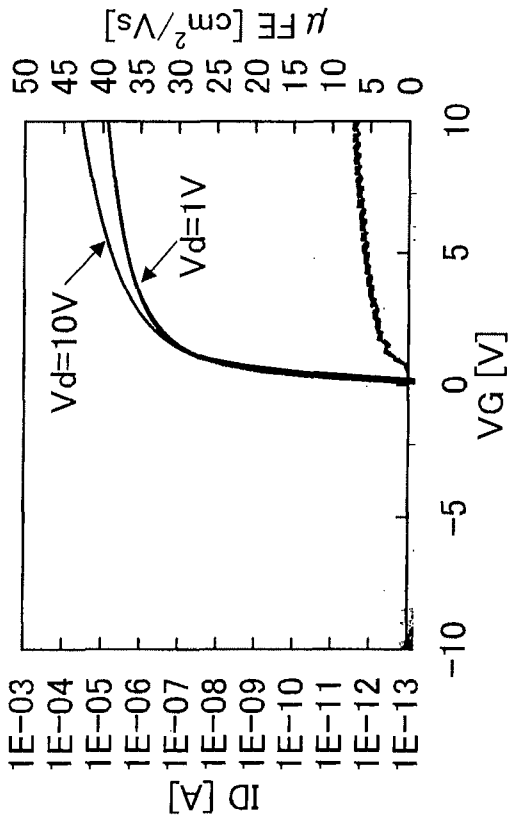


FIG. 25B

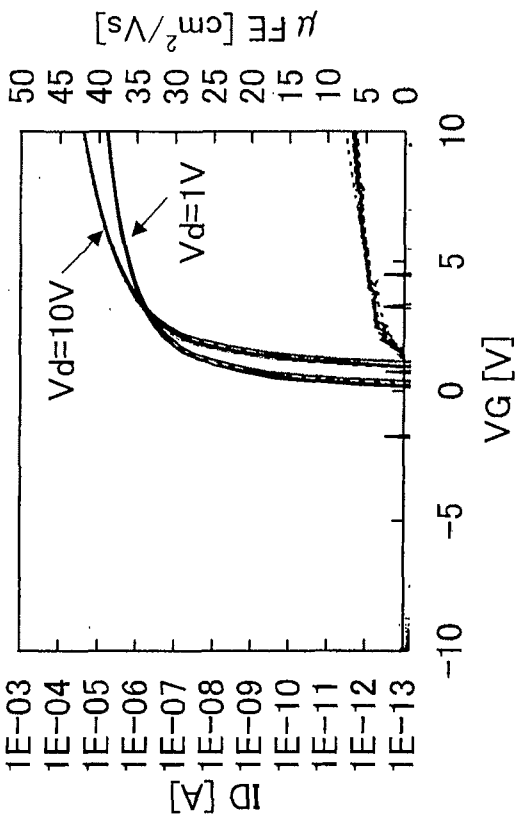


FIG. 25C

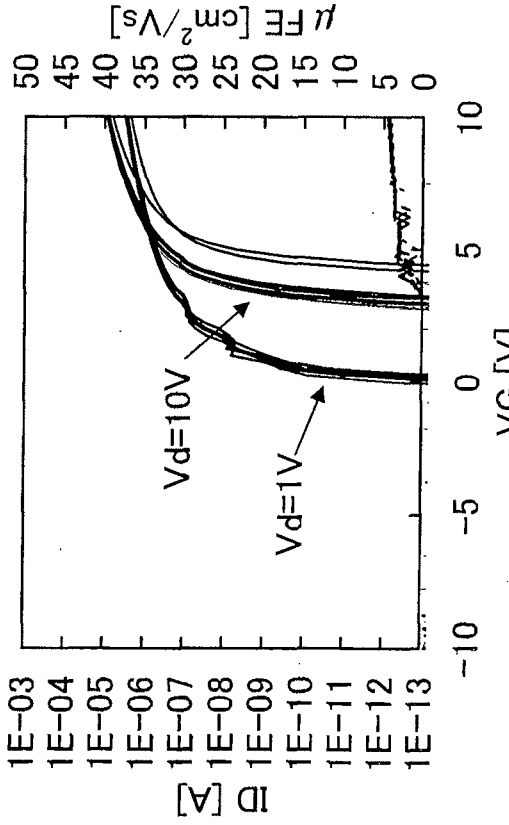


FIG. 25D

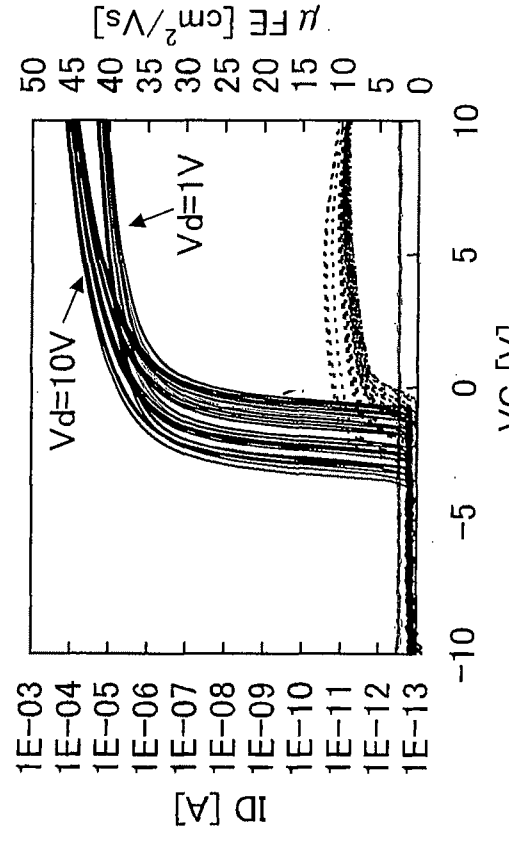


FIG. 26

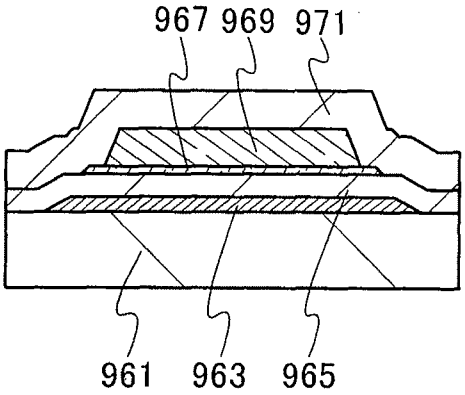


FIG. 27A

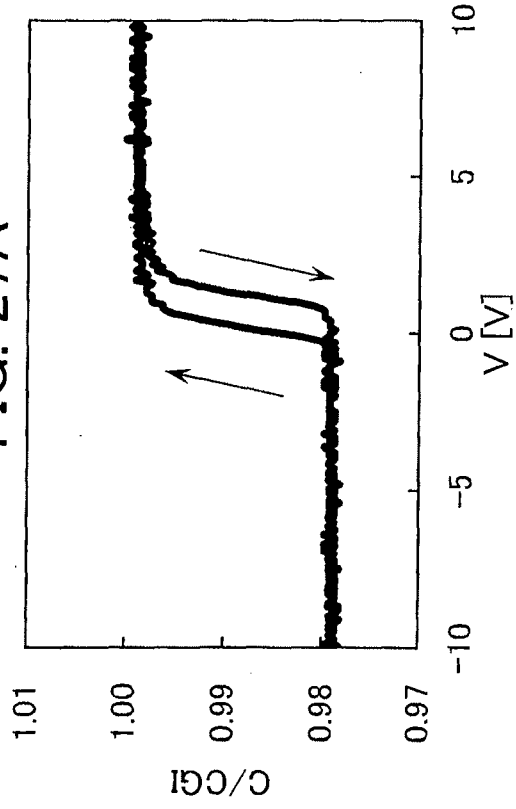


FIG. 27B

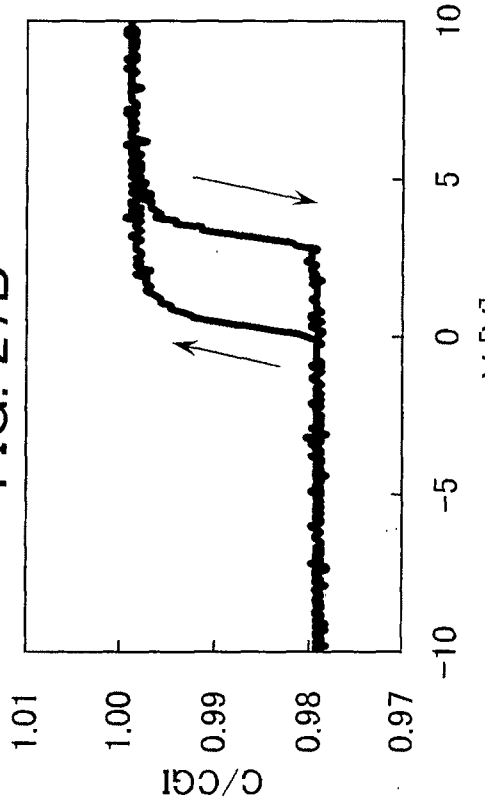


FIG. 27C

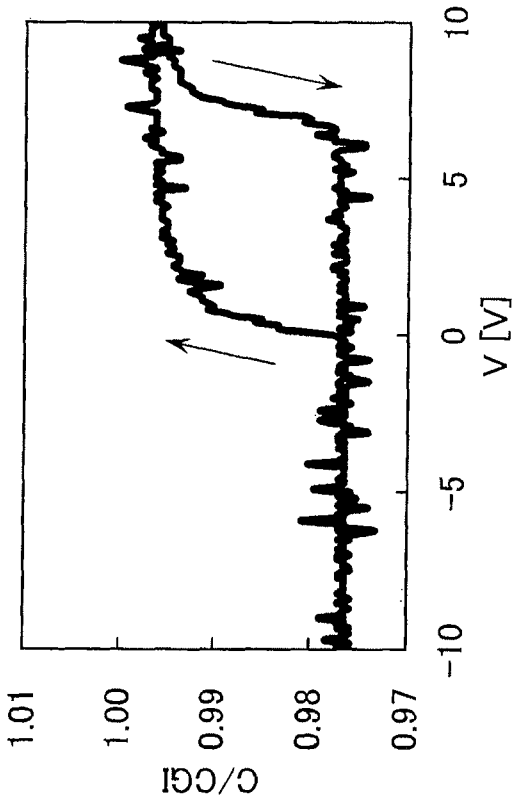


FIG. 27D

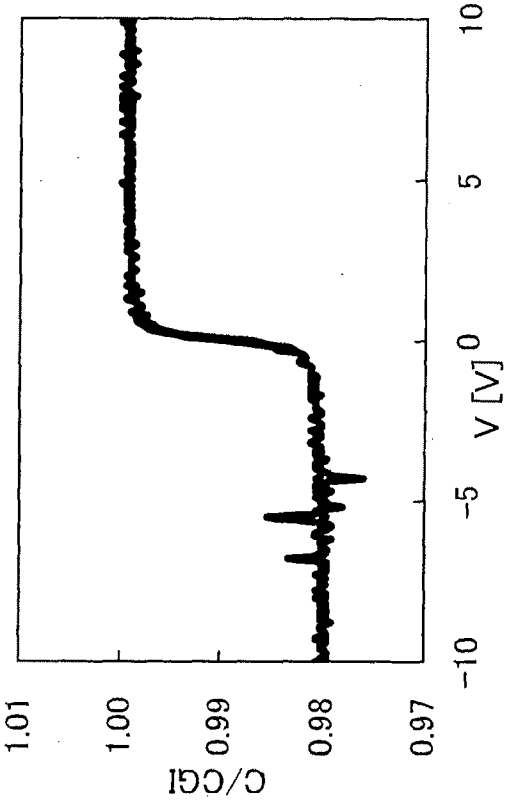


FIG. 28A

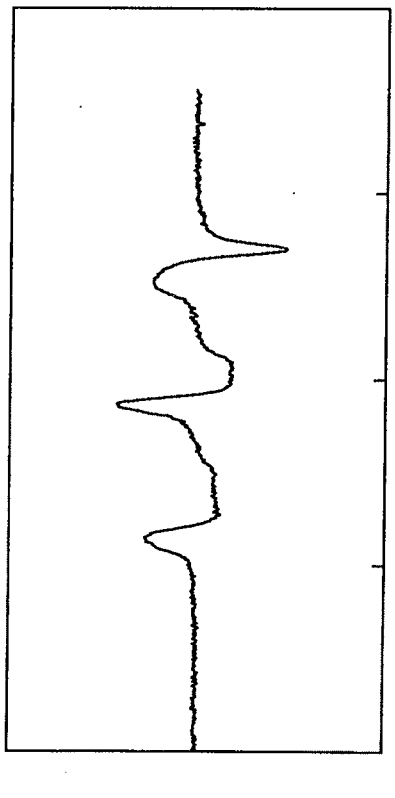


FIG. 28B

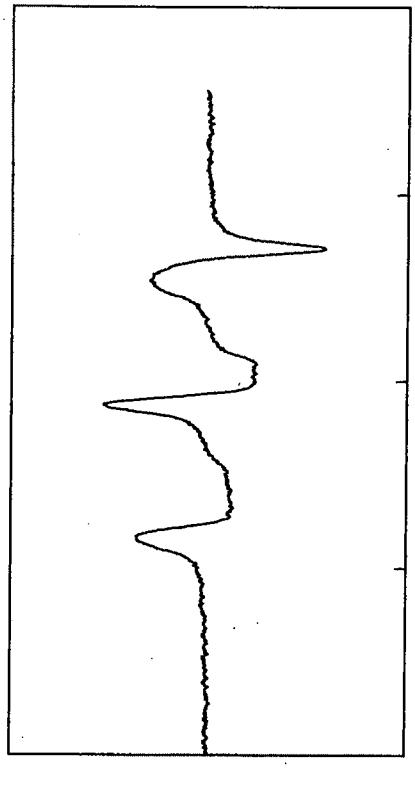


FIG. 28C

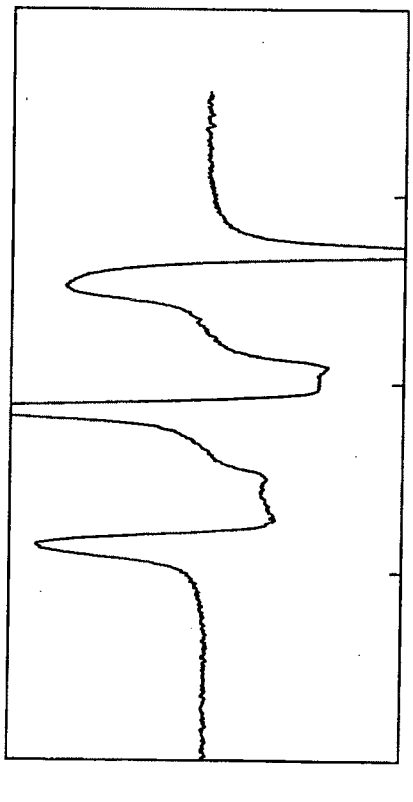


FIG. 28D

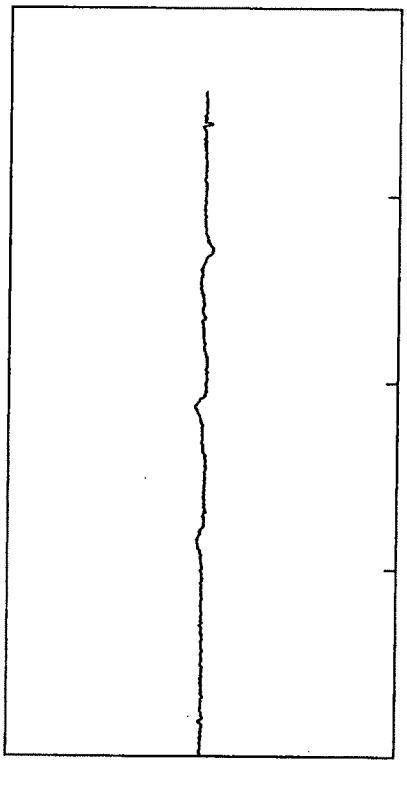
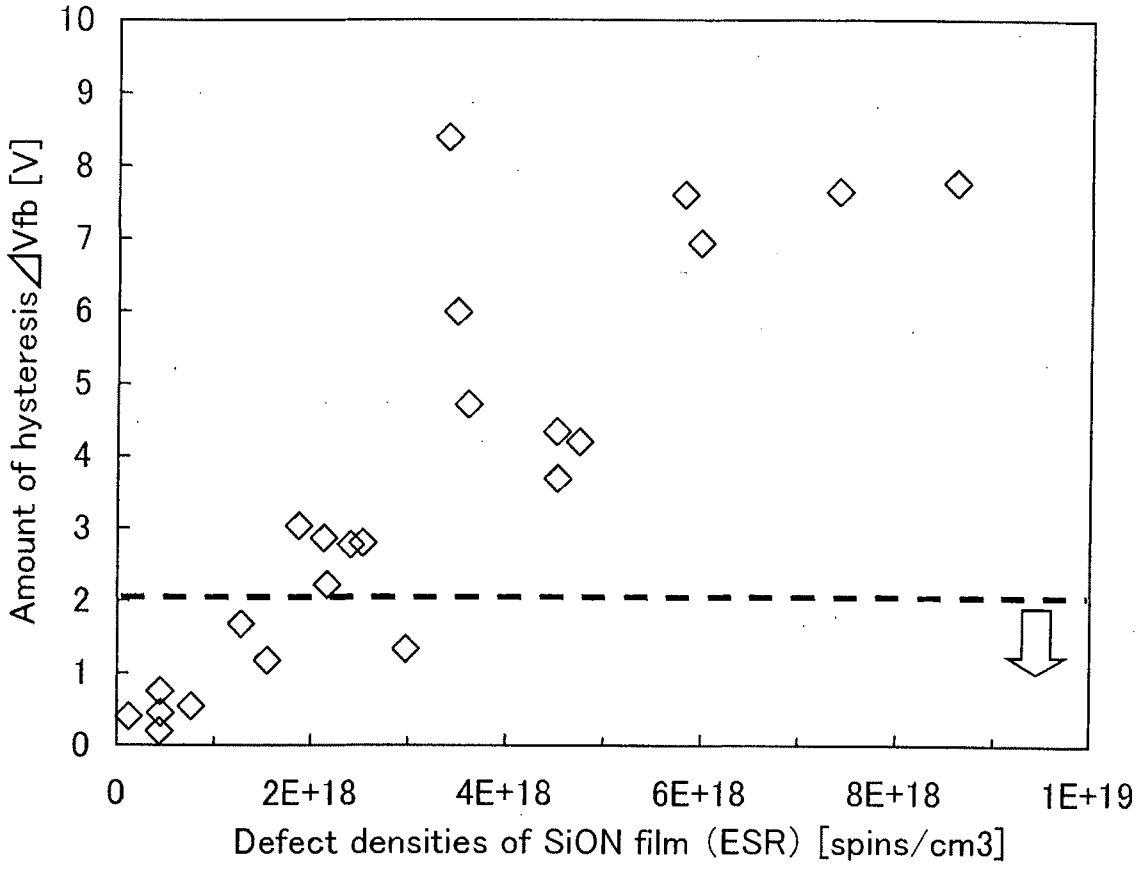


FIG. 29


10
9
8
7
6
5
4
3
2
1
0
Amount of hysteresis ⊿Vfb [V]
0
2E+18
4E+18
6E+18
8E+18
1E+19
Defect densities of SiON film (ESR) [spins/cm3]