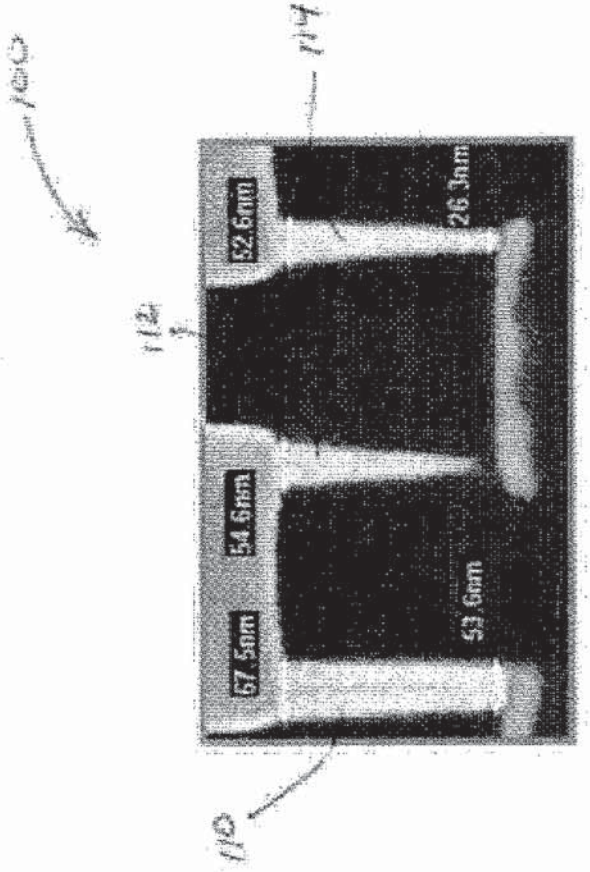


Figure 1

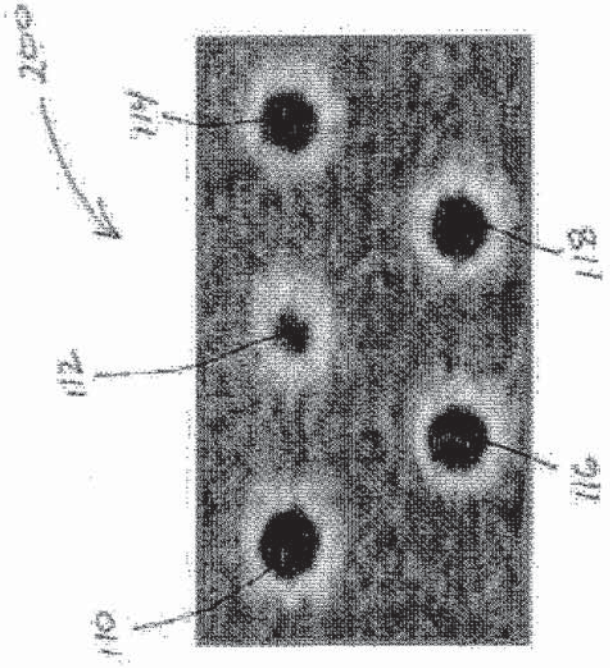
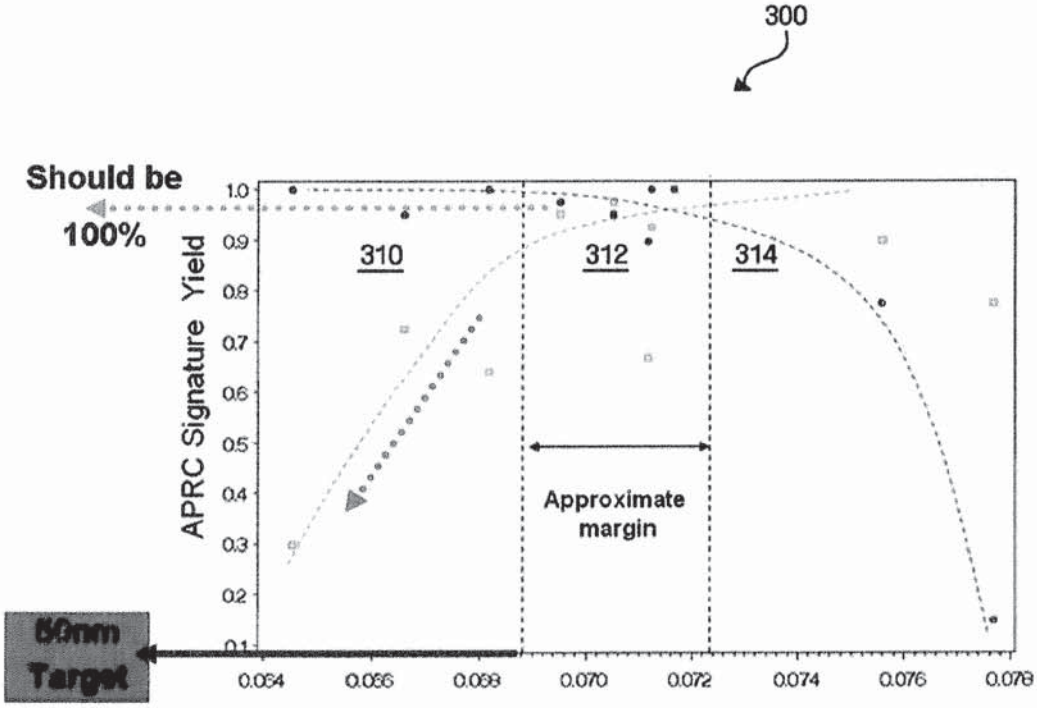


Figure 2

FIG. 3


300
Should be
100%
APRC Signature Yield
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
310
312
314
Approximate
margin
50nm
Target
0.064
0.066
0.068
0.070
0.072
0.074
0.076
0.078

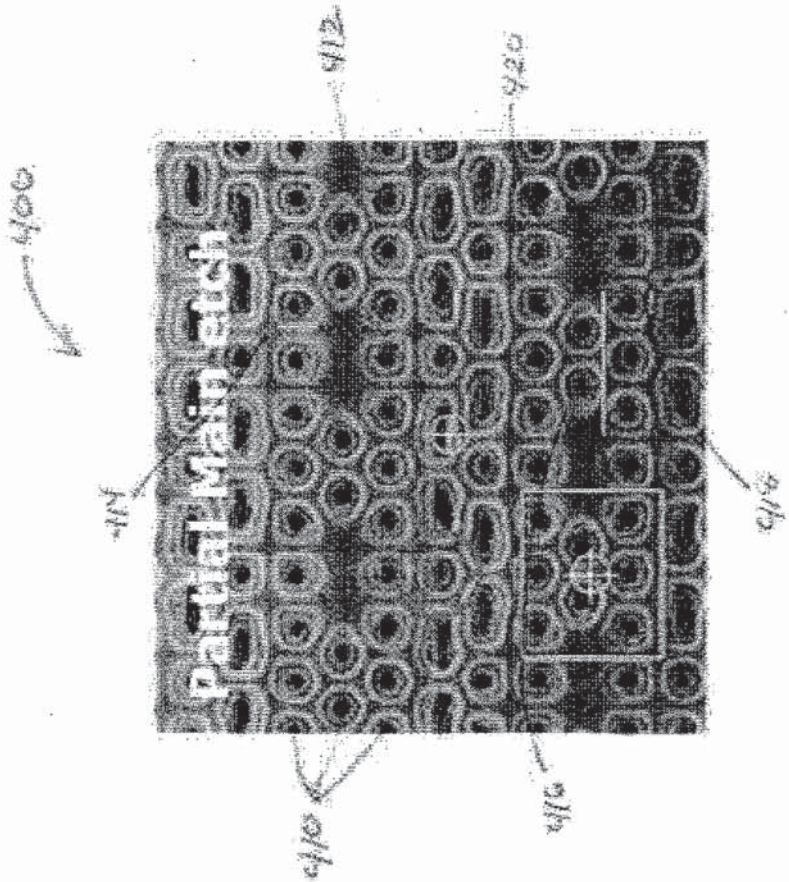


Figure 4

Figure 5

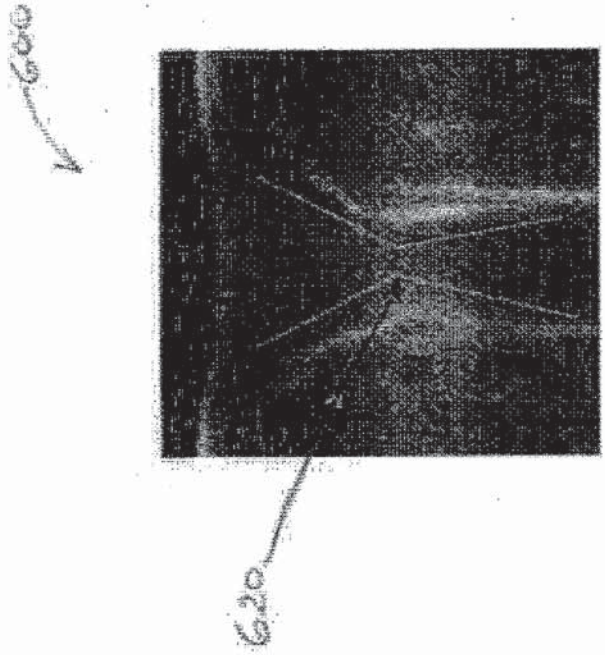


Figure 6

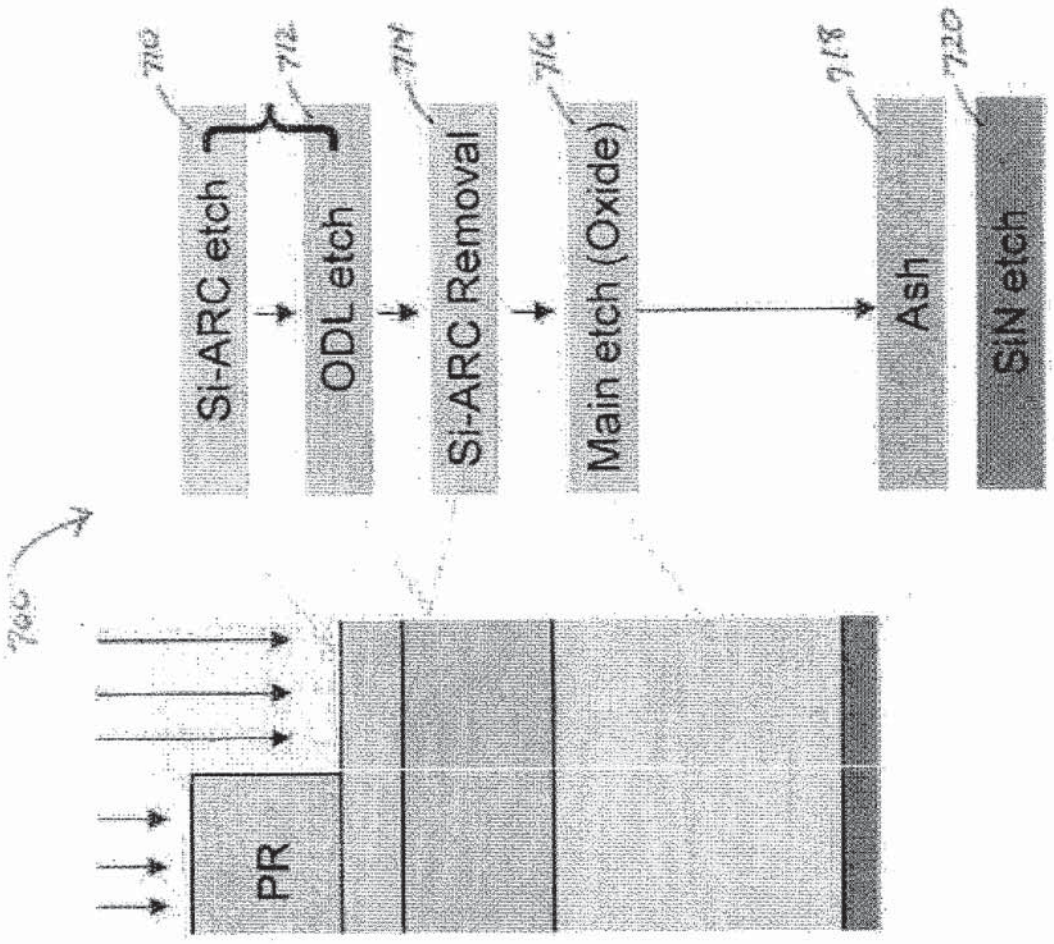

710
712
714
716
718
720
Si-ARC etch
ODL etch
Si-ARC Removal
Main etch (Oxide)
Ash
SiN etch
700
PR

Figure 7

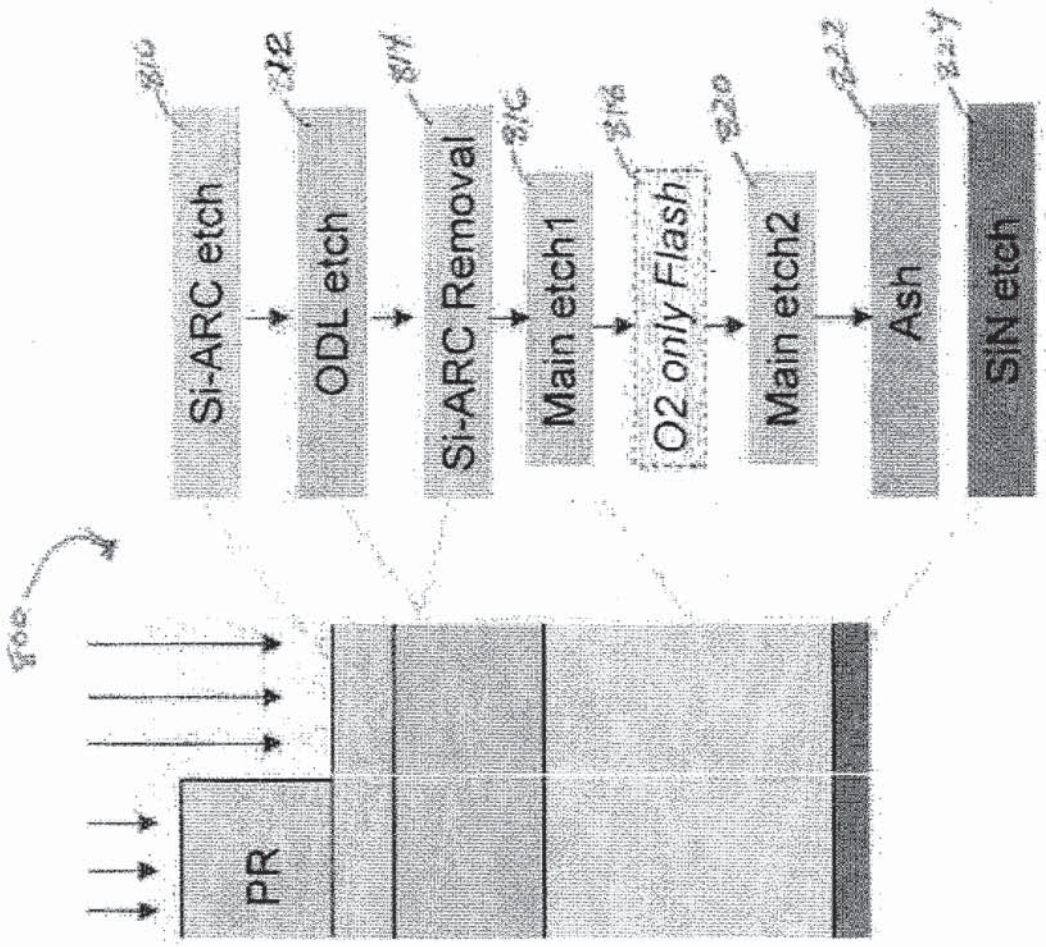

Si-ARC etch
ODL etch
Si-ARC Removal
Main etch1
O2 only Flash
Main etch2
Ash
SiN etch
PR

Figure 8

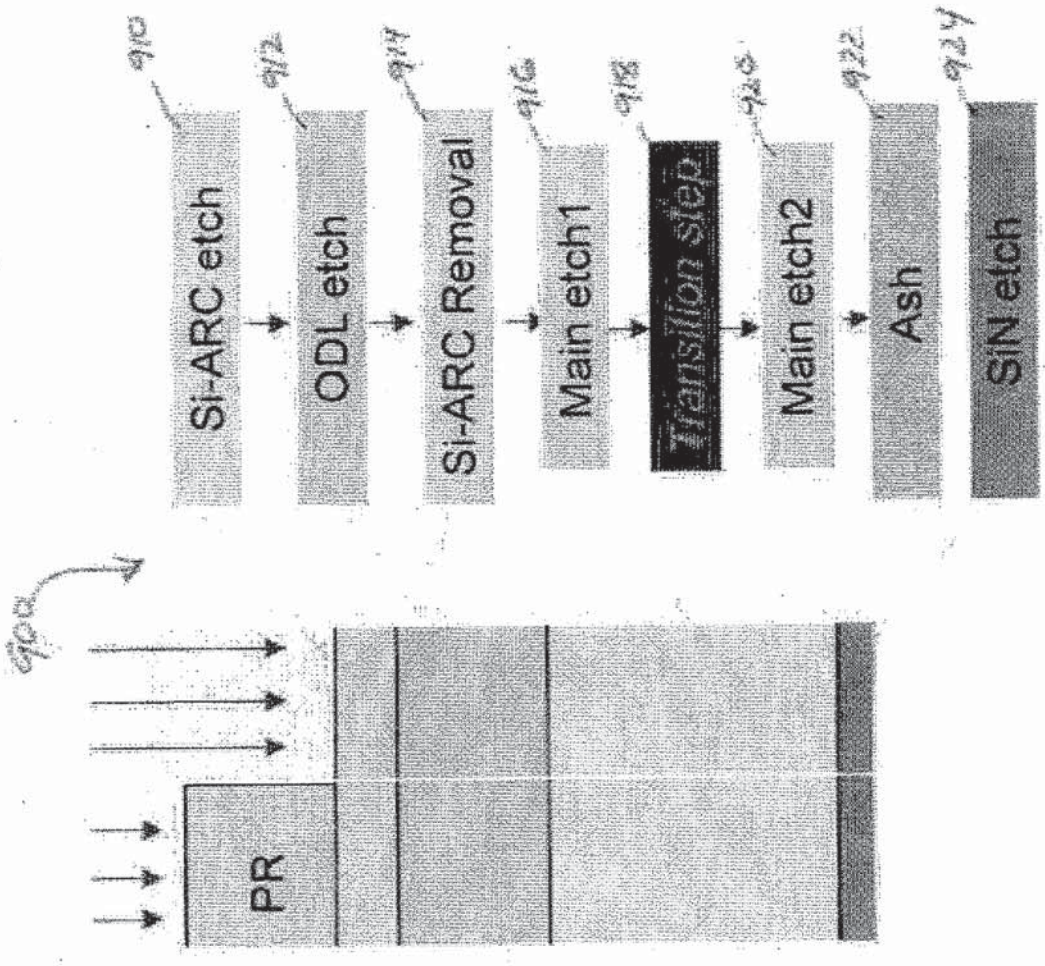

910
912
914
916
918
920
922
924
Si-ARC etch
ODL etch
Si-ARC Removal
Main etch1
Transition step
Main etch2
Ash
SiN etch
PR

Figure 9

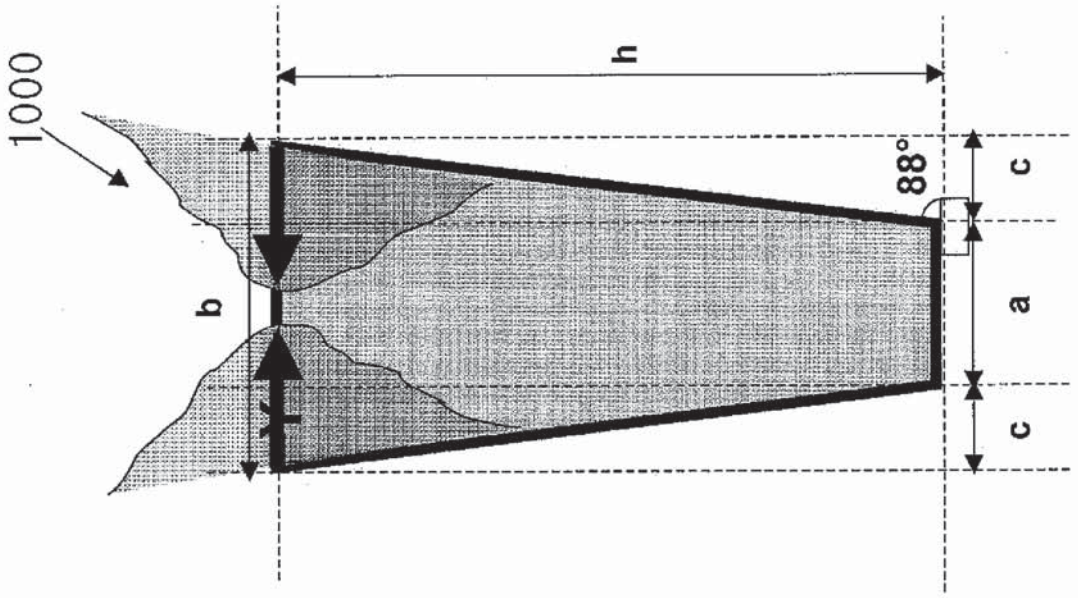


Figure 10

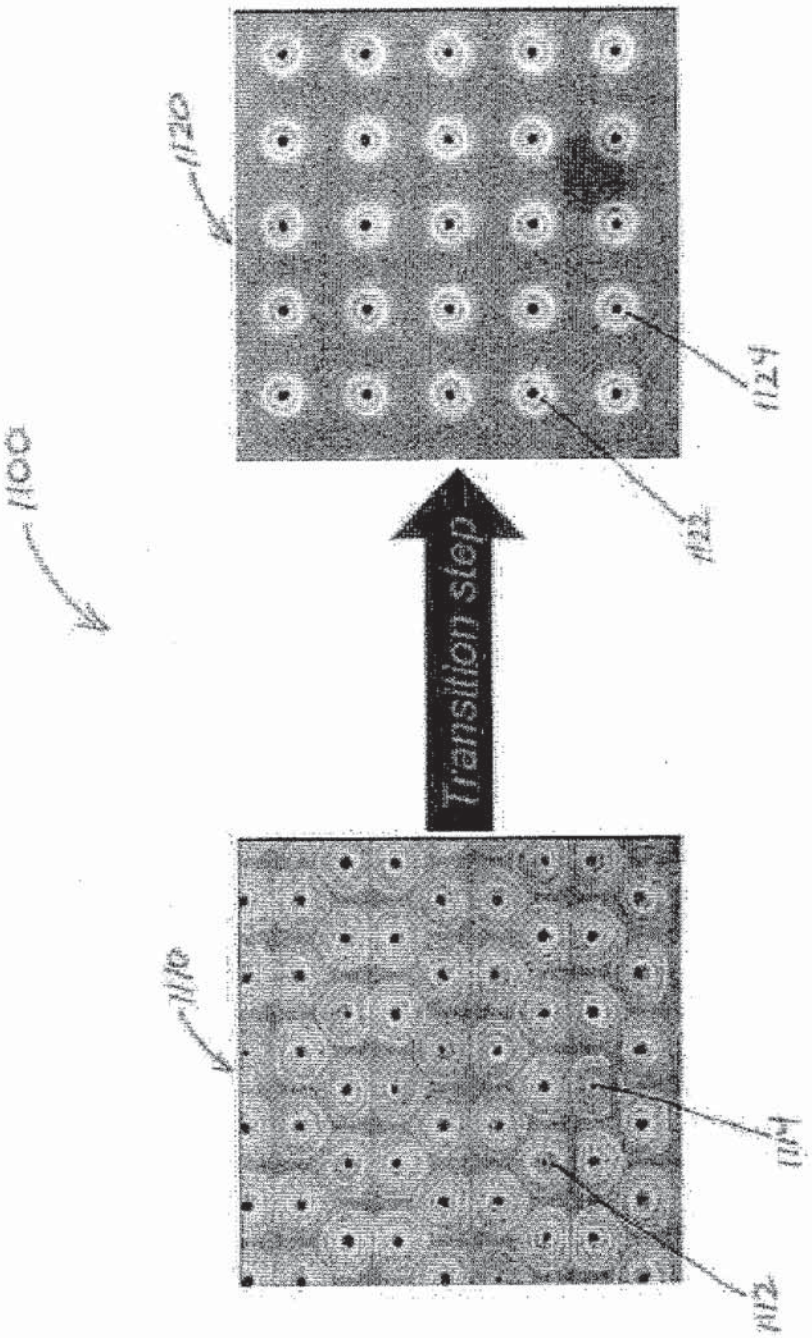


Figure 11

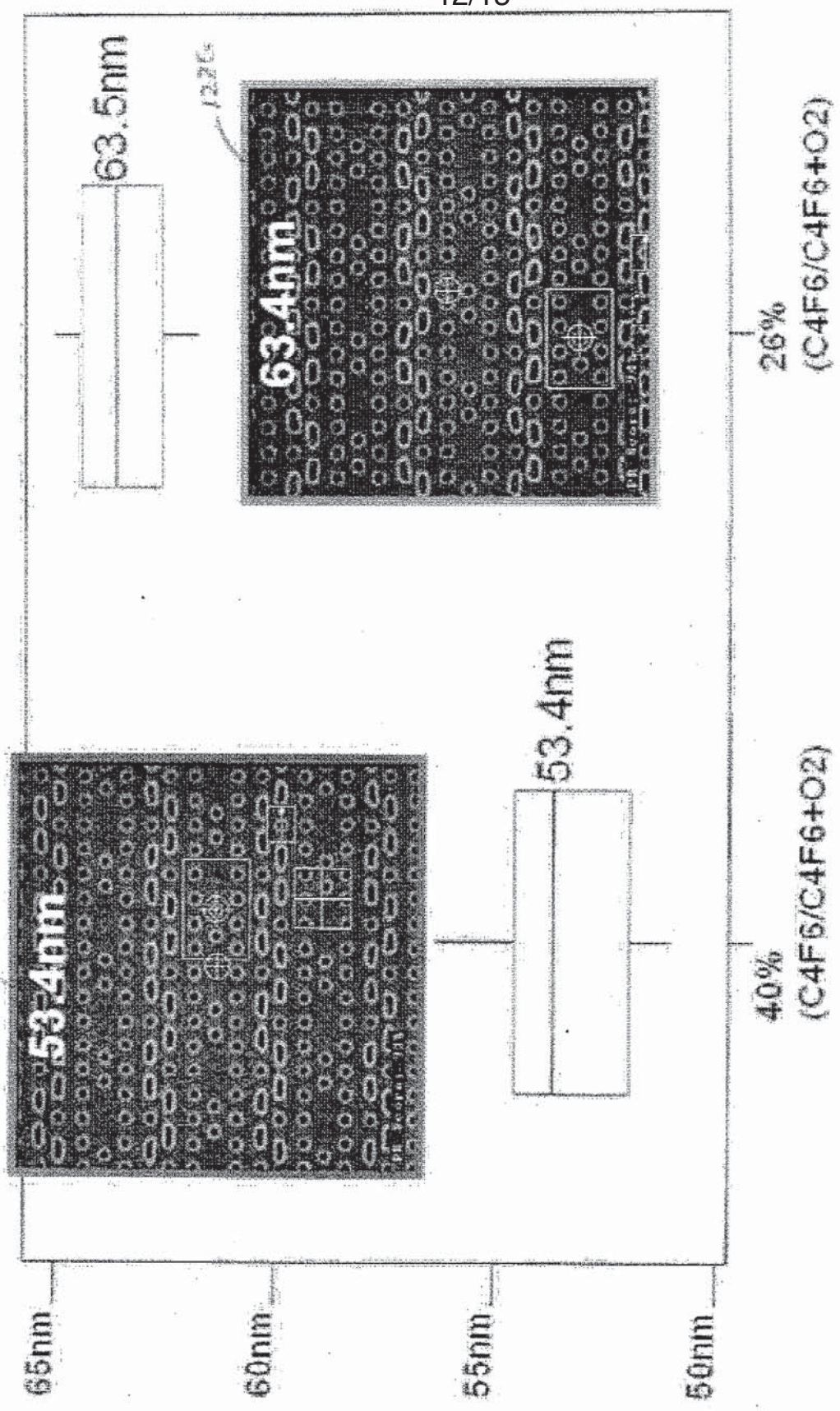
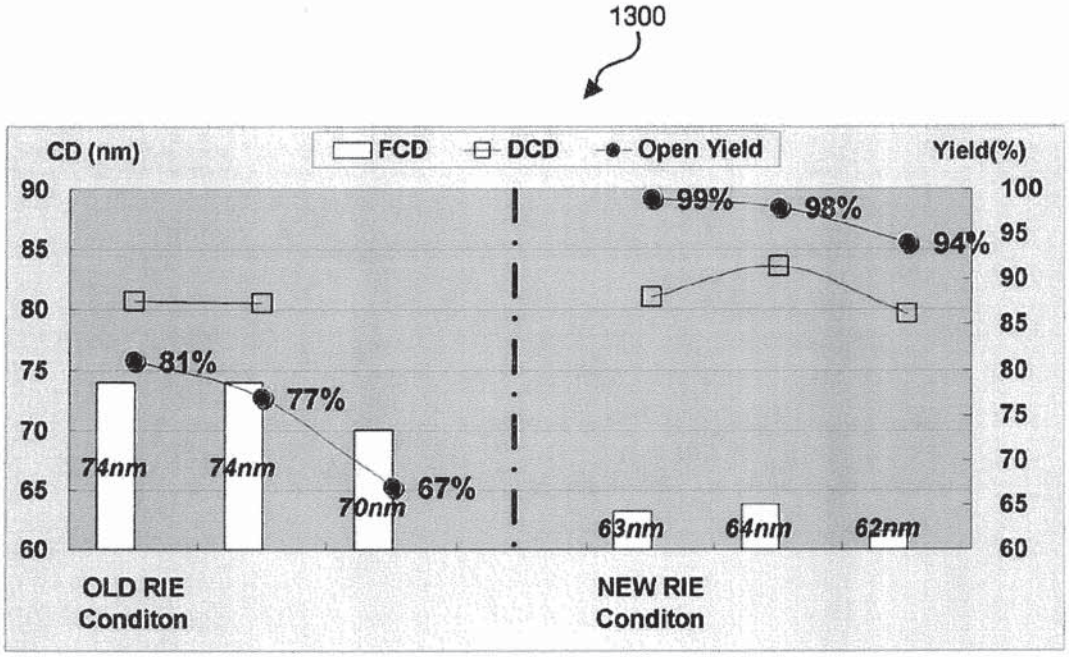

1200
1240
53.4nm
1220
63.4nm
63.5nm
65nm
60nm
55nm
50nm
53.4nm
40%
(C4F6/C4F6+O2)
26%
(C4F6/C4F6+O2)

Figure 12

FIG. 13


1300
CD (nm)
FCD
DCD
Open Yield
Yield(%)
90
85
80
75
70
65
60
100
95
90
85
80
75
70
65
60
81%
77%
67%
99%
98%
94%
74nm
74nm
70nm
63nm
64nm
62nm
OLD RIE
Conditon
NEW RIE
Conditon