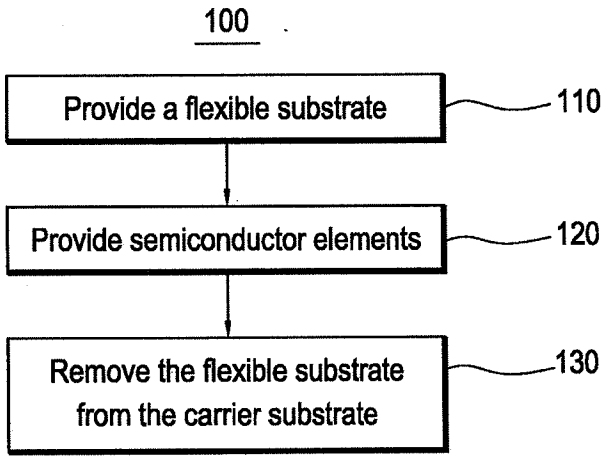

100
Provide a flexible substrate
110
Provide semiconductor elements
120
Remove the flexible substrate from the carrier substrate
130

FIG. 1

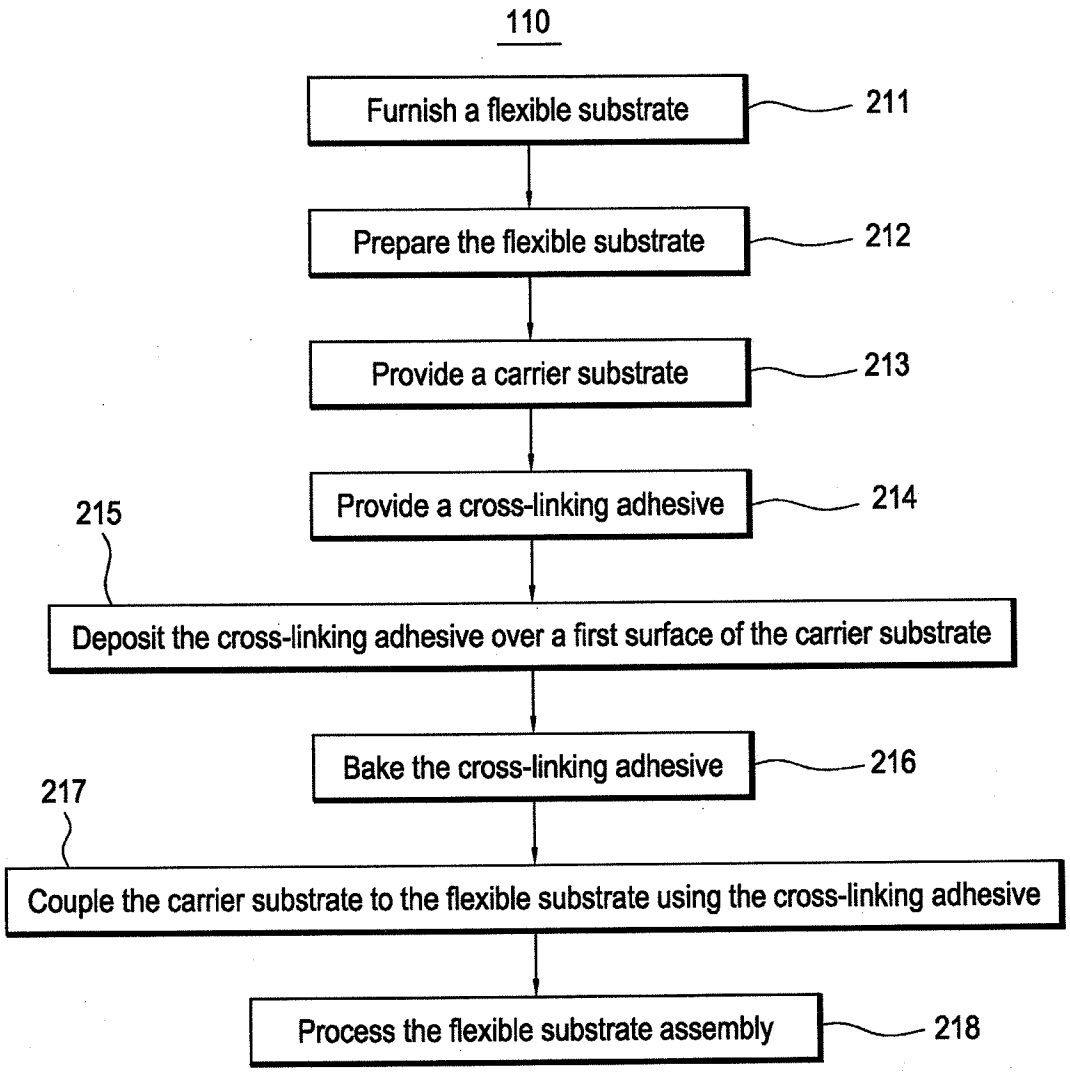

110
Furnish a flexible substrate
211
Prepare the flexible substrate
212
Provide a carrier substrate
213
Provide a cross-linking adhesive
214
215
Deposit the cross-linking adhesive over a first surface of the carrier substrate
Bake the cross-linking adhesive
216
217
Couple the carrier substrate to the flexible substrate using the cross-linking adhesive
Process the flexible substrate assembly
218

FIG. 2

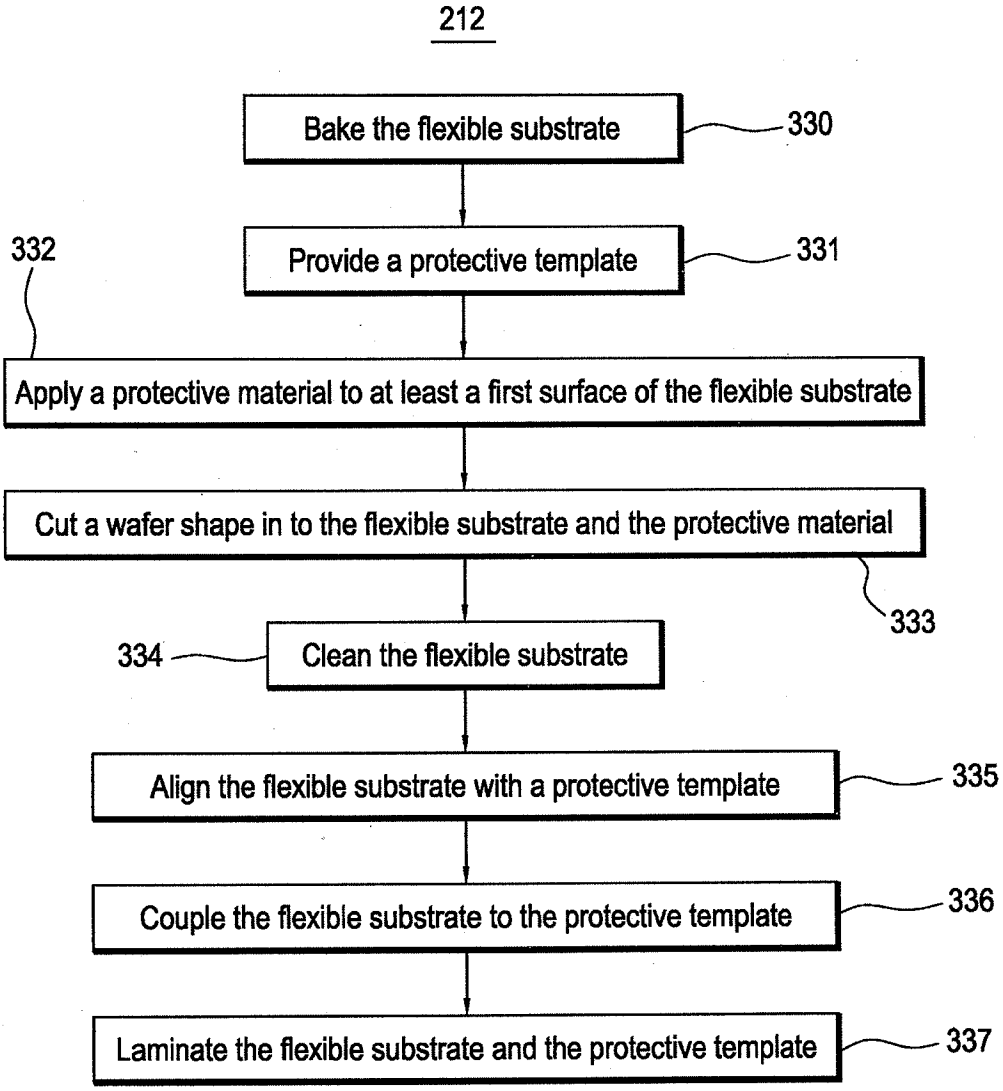

212
Bake the flexible substrate
330
Provide a protective template
331
332
Apply a protective material to at least a first surface of the flexible substrate
Cut a wafer shape in to the flexible substrate and the protective material
333
334
Clean the flexible substrate
Align the flexible substrate with a protective template
335
Couple the flexible substrate to the protective template
336
Laminate the flexible substrate and the protective template
337

FIG. 3

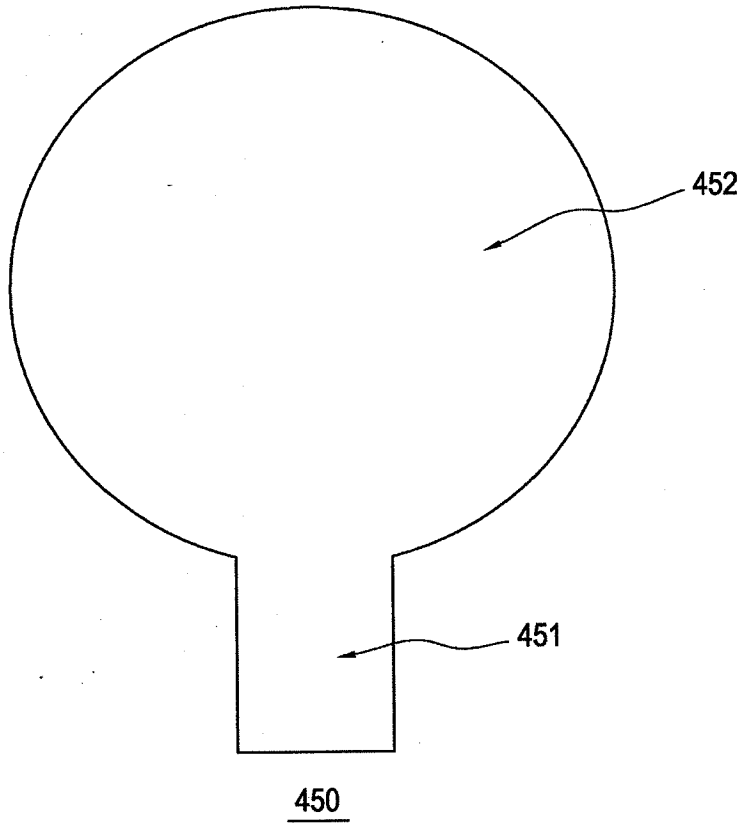


FIG. 4

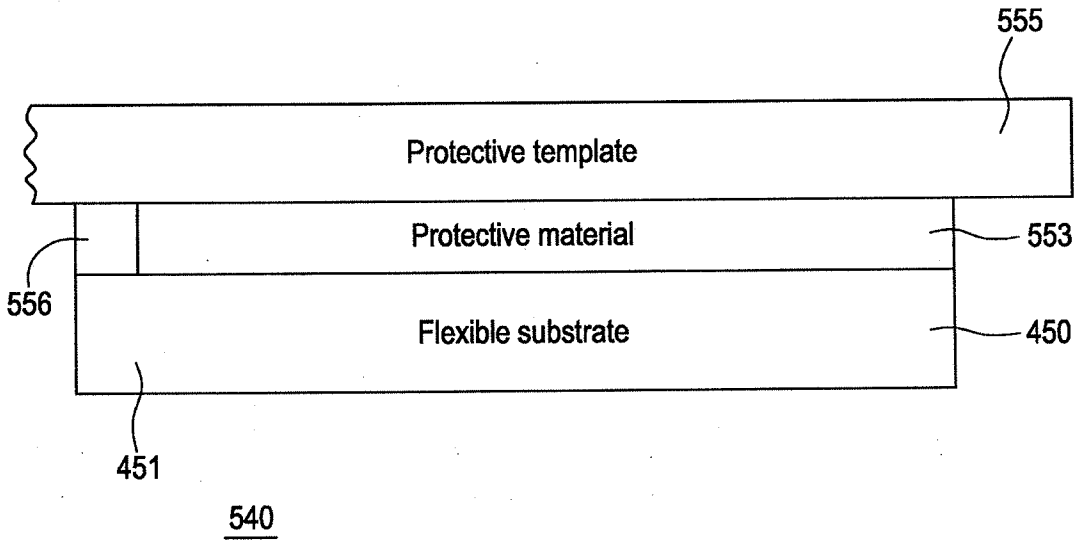

555
Protective template
Protective material
553
556
Flexible substrate
450
451
540

FIG. 5

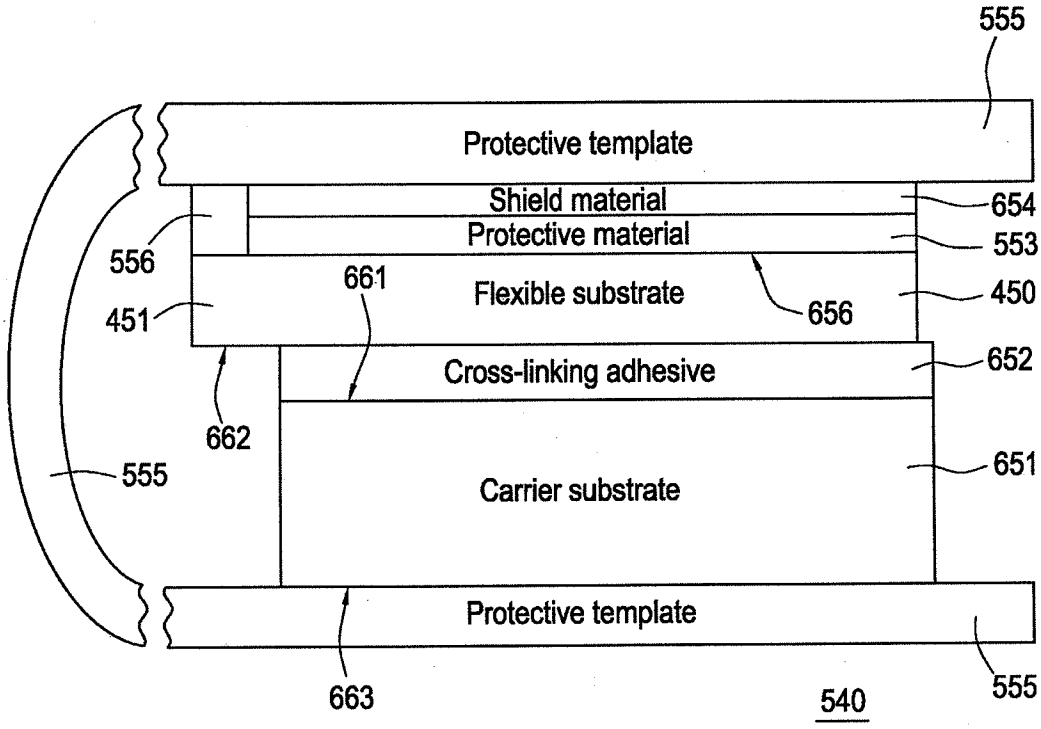

555
Protective template
Shield material
654
Protective material
553
556
661
Flexible substrate
450
451
656
Cross-linking adhesive
652
662
555
Carrier substrate
651
Protective template
663
540
555

FIG. 6

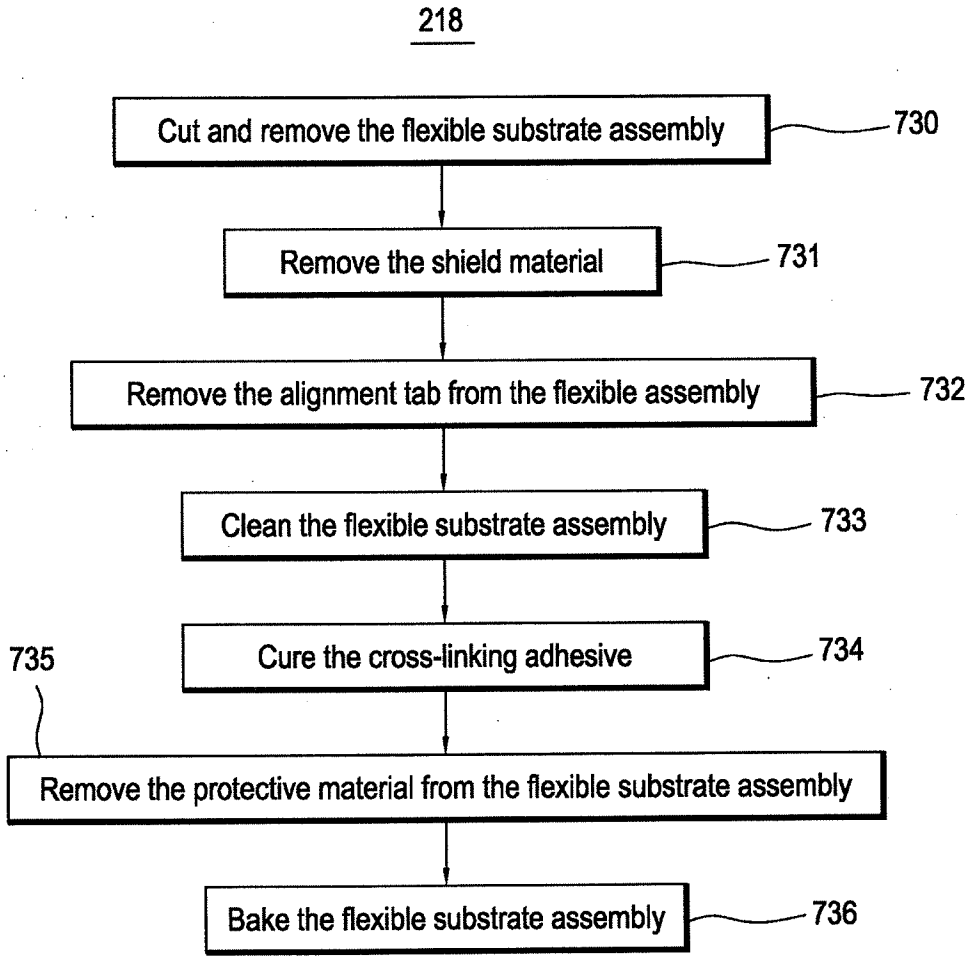

218
Cut and remove the flexible substrate assembly
730
Remove the shield material
731
Remove the alignment tab from the flexible assembly
732
Clean the flexible substrate assembly
733
Cure the cross-linking adhesive
734
735
Remove the protective material from the flexible substrate assembly
Bake the flexible substrate assembly
736

FIG. 7

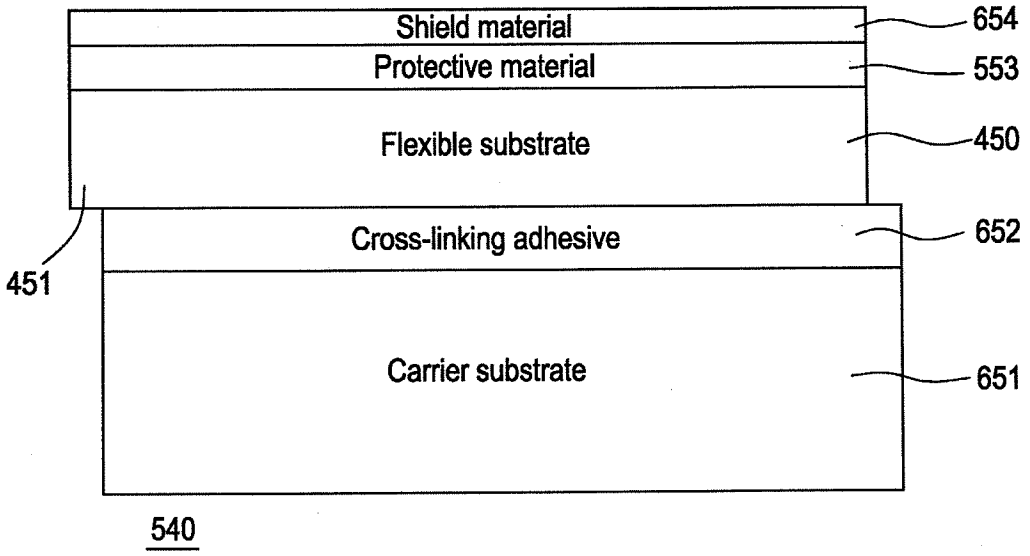

Shield material
654
Protective material
553
Flexible substrate
450
451
Cross-linking adhesive
652
Carrier substrate
651
540

FIG. 8

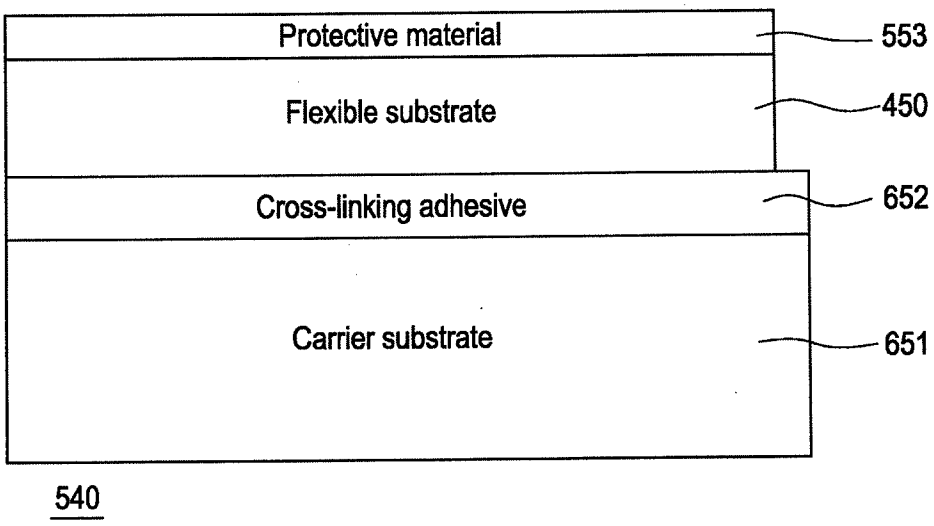

Protective material
553
Flexible substrate
450
Cross-linking adhesive
652
Carrier substrate
651
540

FIG. 9

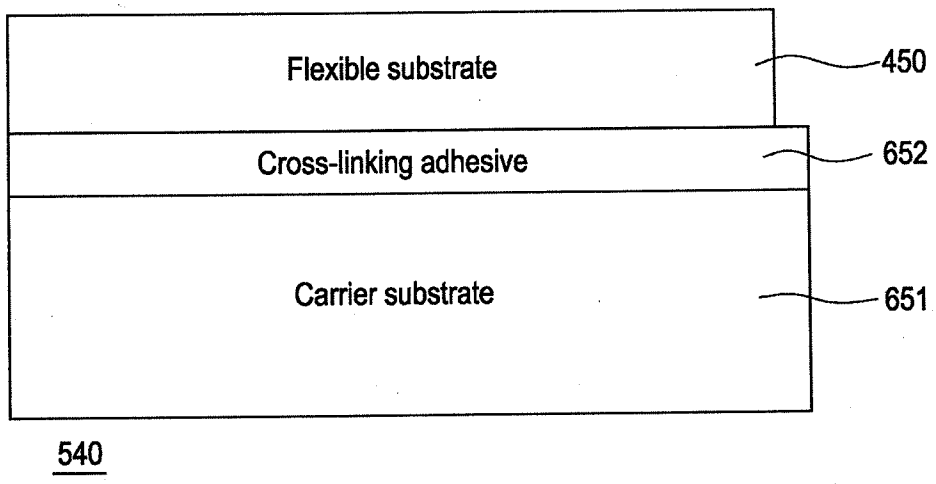

Flexible substrate
450
Cross-linking adhesive
652
Carrier substrate
651
540

FIG. 10

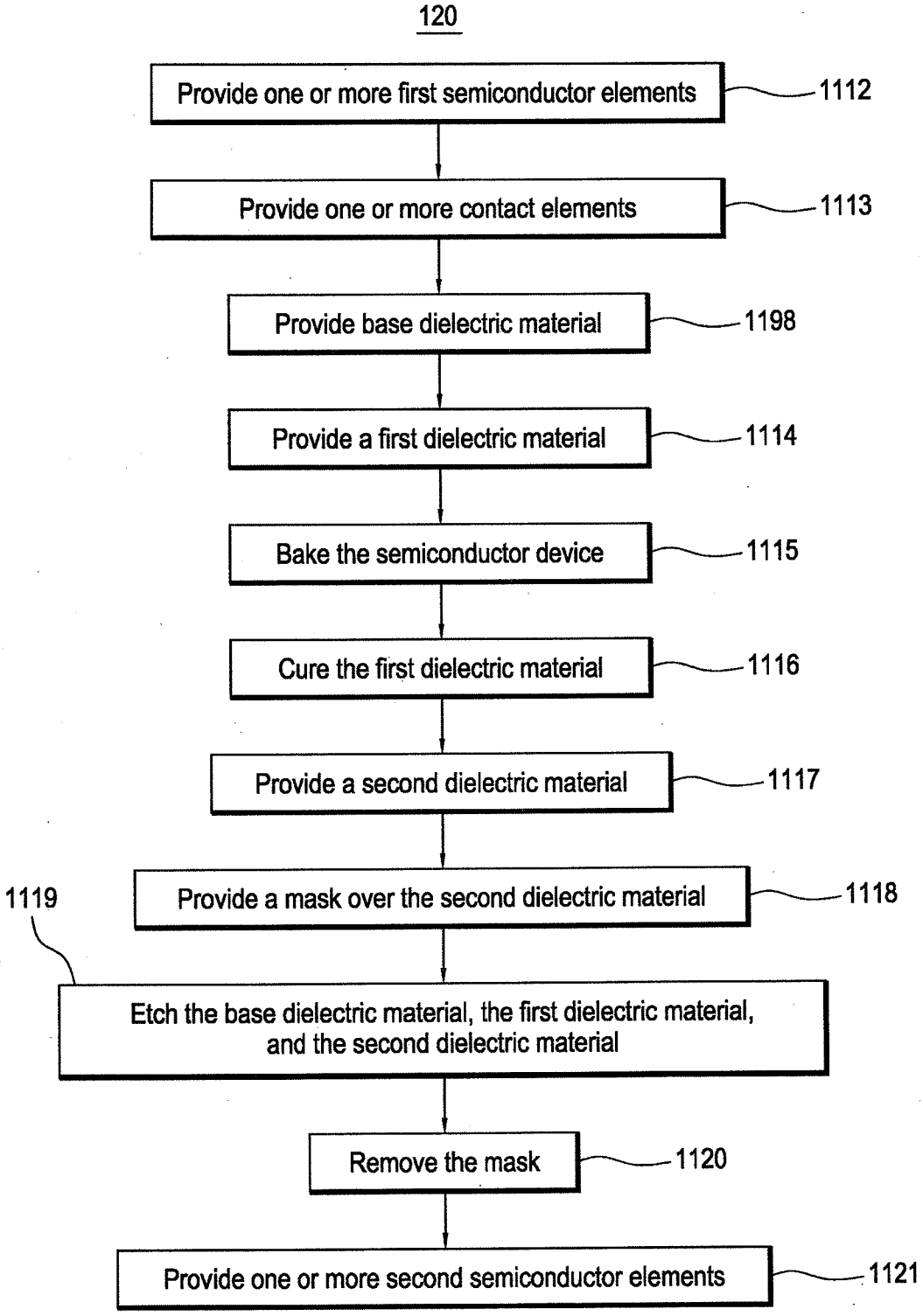

120
Provide one or more first semiconductor elements
1112
Provide one or more contact elements
1113
Provide base dielectric material
1198
Provide a first dielectric material
1114
Bake the semiconductor device
1115
Cure the first dielectric material
1116
Provide a second dielectric material
1117
1119
Provide a mask over the second dielectric material
1118
Etch the base dielectric material, the first dielectric material, and the second dielectric material
Remove the mask
1120
Provide one or more second semiconductor elements
1121

FIG. 11

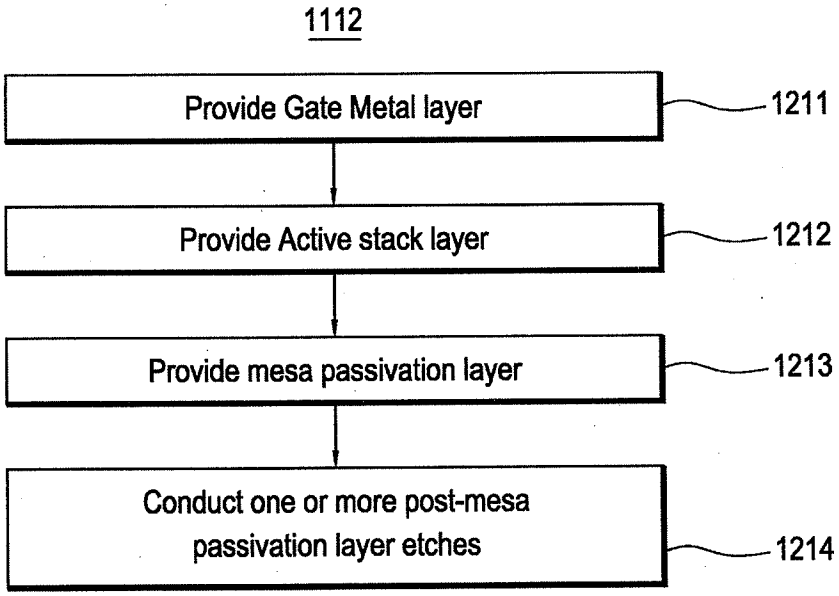

1112
Provide Gate Metal layer
1211
Provide Active stack layer
1212
Provide mesa passivation layer
1213
Conduct one or more post-mesa passivation layer etches
1214

FIG. 12

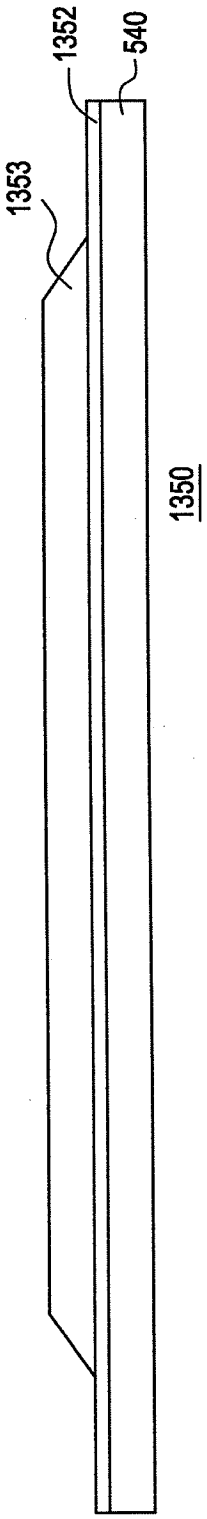


FIG. 13

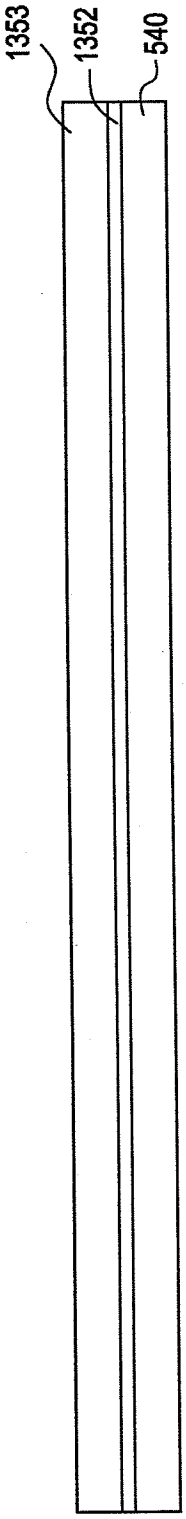


FIG. 14

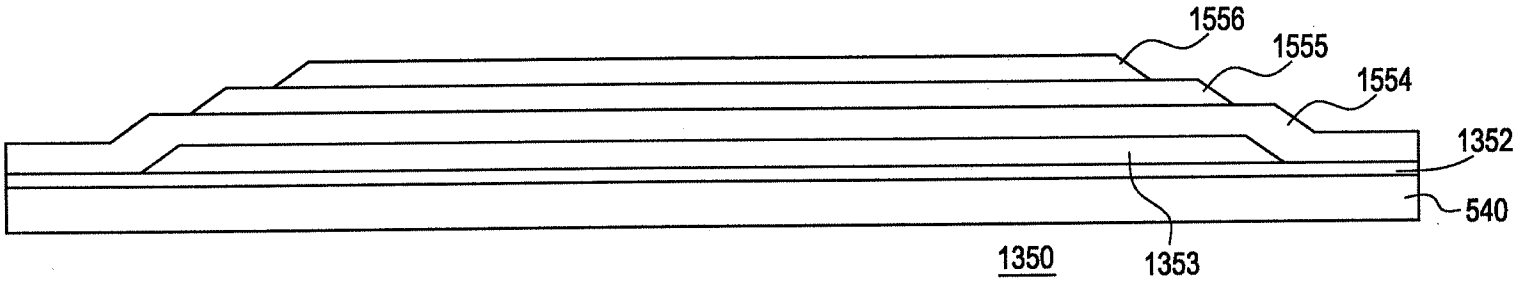


FIG. 15

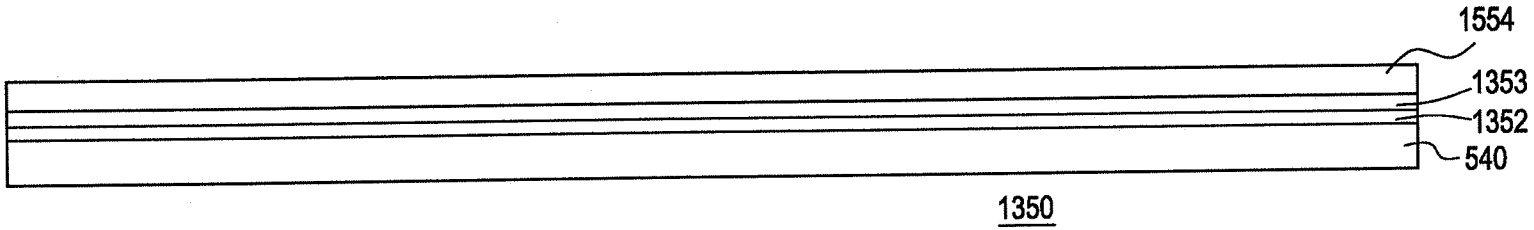


FIG. 16

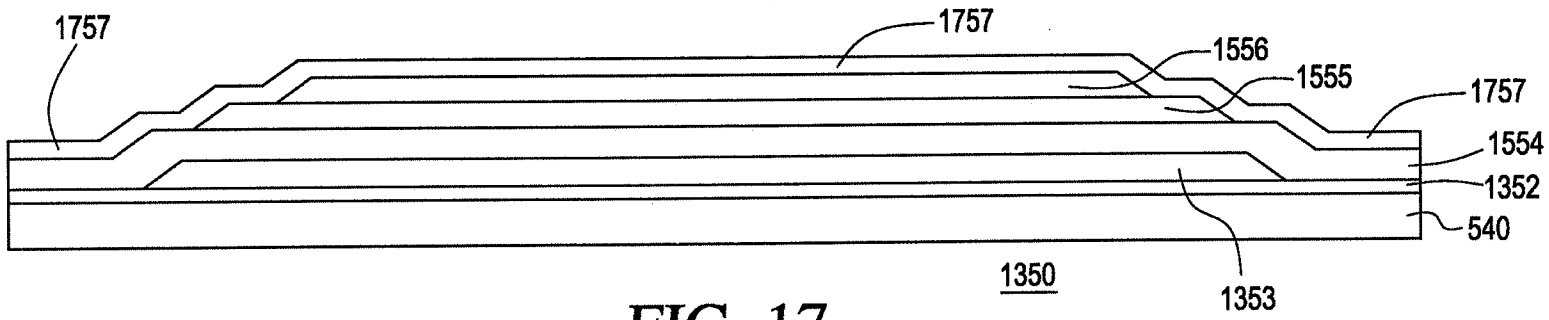

1757
1757
1556
1555
1757
1554
1352
540
1350
1353

FIG. 17

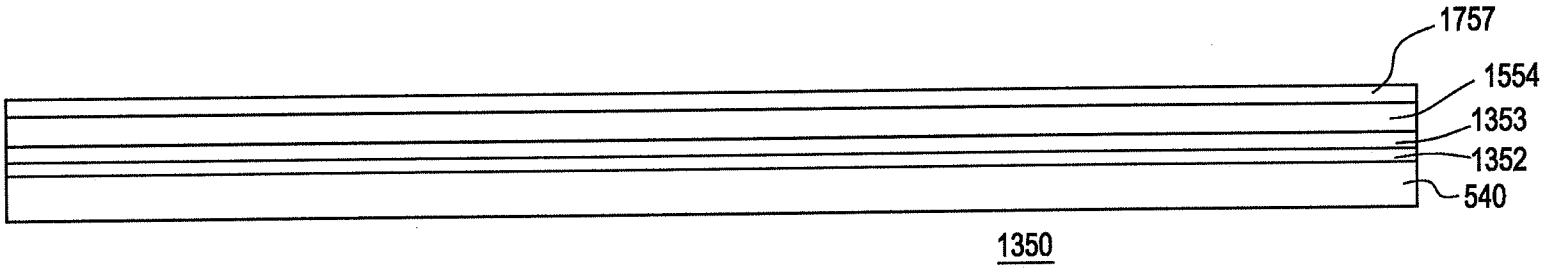

1757
1554
1353
1352
540
1350

FIG. 18


1757
1990
1757
1556
1990
1555
1757
1554
1352
540
1350
1353

FIG. 19

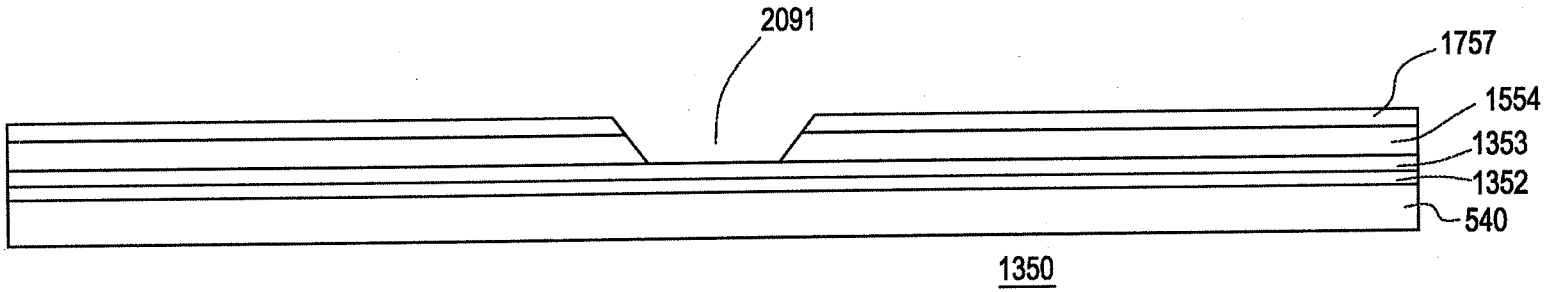

2091
1757
1554
1353
1352
540
1350

FIG. 20

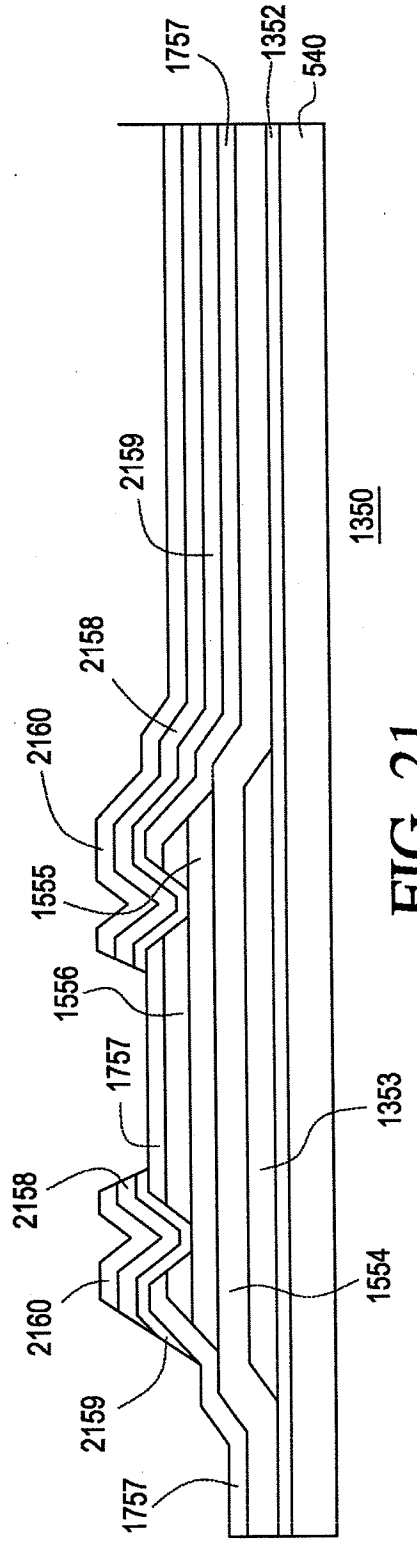

1757
1352
540
2159
1350
2158
2160
1555
1556
1757
1353
2158
1554
2160
2159
1757

FIG. 21

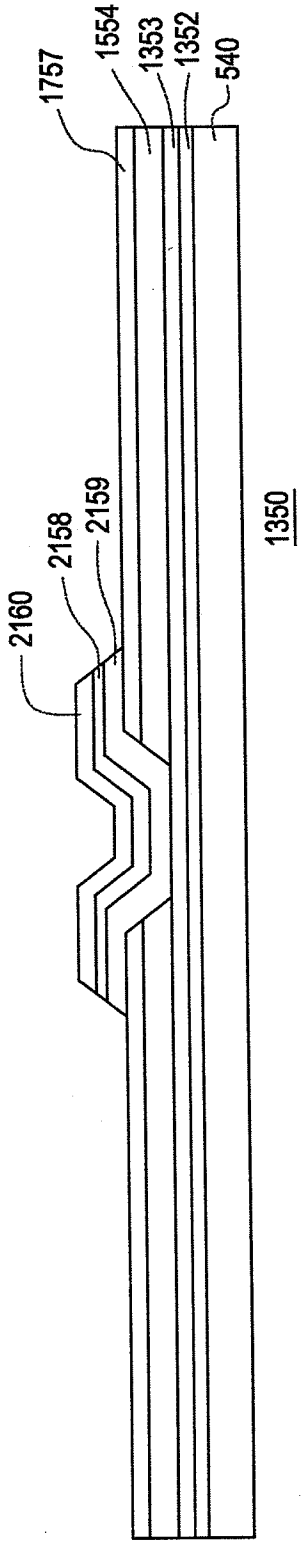

1757
1554
1353
1352
540
2158
2159
1350
2160

FIG. 22

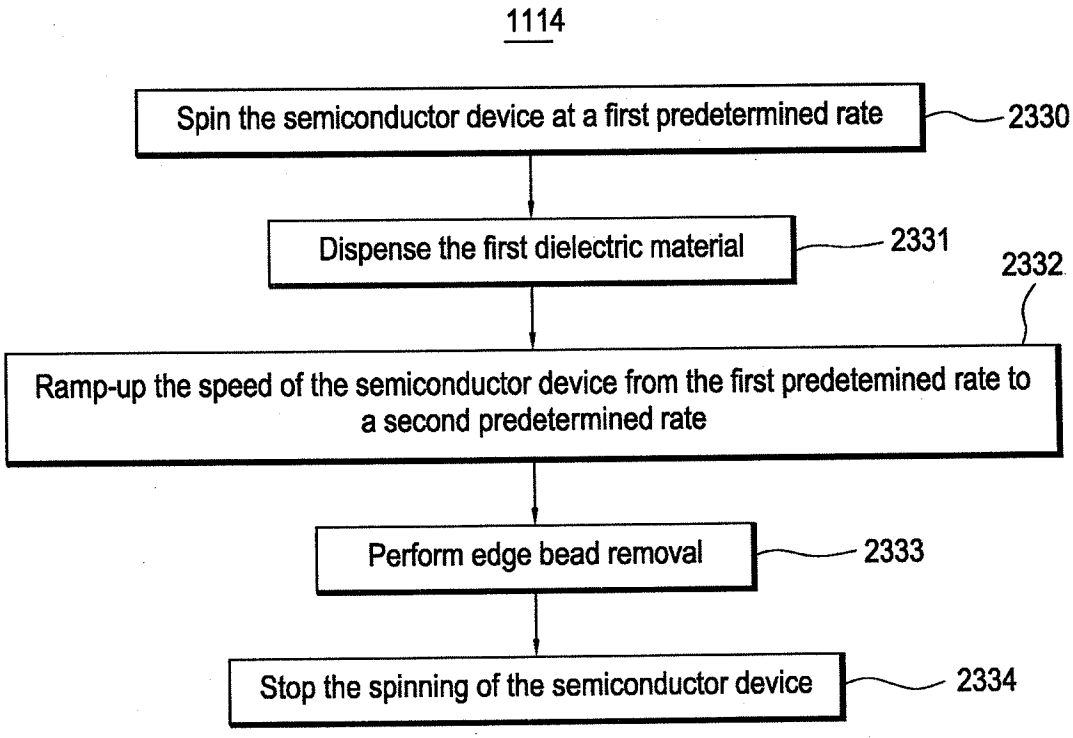

1114
Spin the semiconductor device at a first predetermined rate
2330
Dispense the first dielectric material
2331
2332
Ramp-up the speed of the semiconductor device from the first predetemined rate to a second predetermined rate
Perform edge bead removal
2333
Stop the spinning of the semiconductor device
2334

FIG. 23

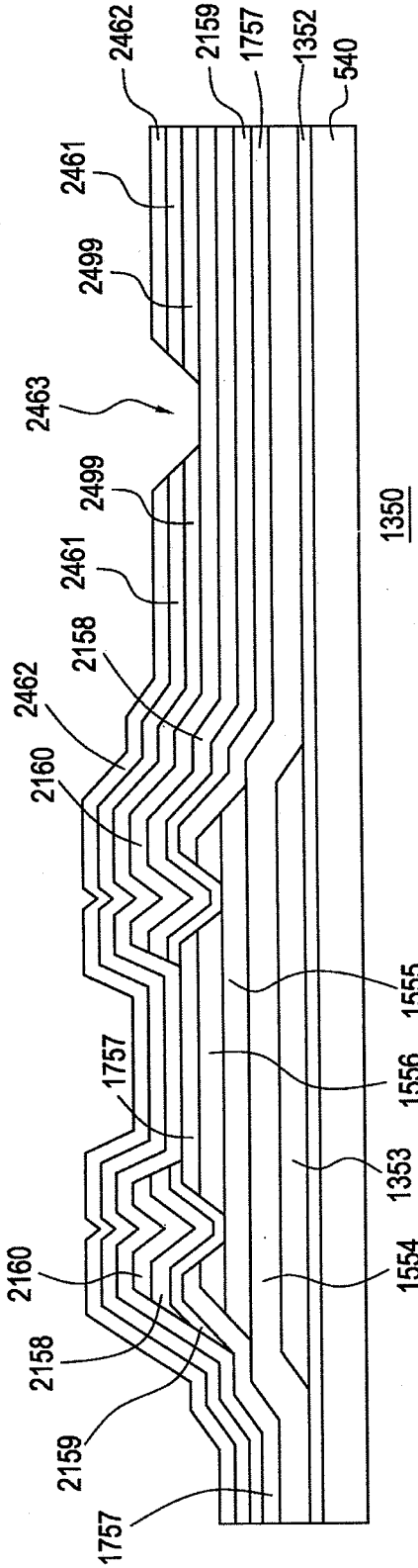

2462
2159
1757
1352
540
2461
2499
2463
2499
2461
2158
2462
2160
1350
1555
1757
1556
1353
1554
2160
2158
2159
1757

FIG. 24

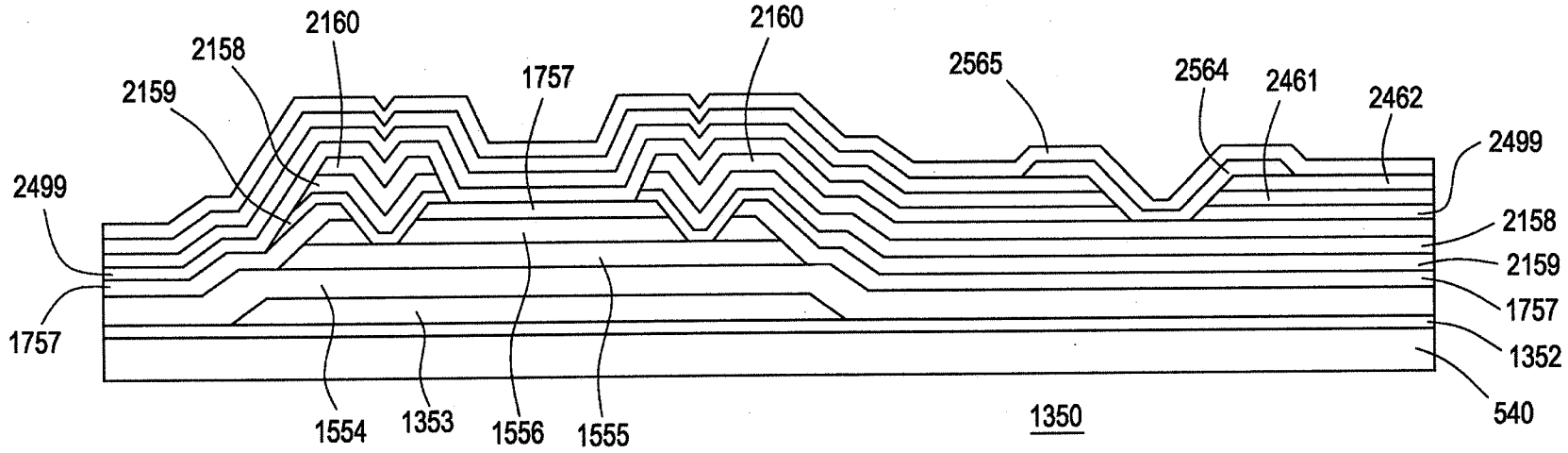

2160
2158
2159
2160
1757
2565
2564
2461
2462
2499
2499
2158
2159
1757
1757
1352
540
1554
1353
1556
1555
1350

FIG. 25

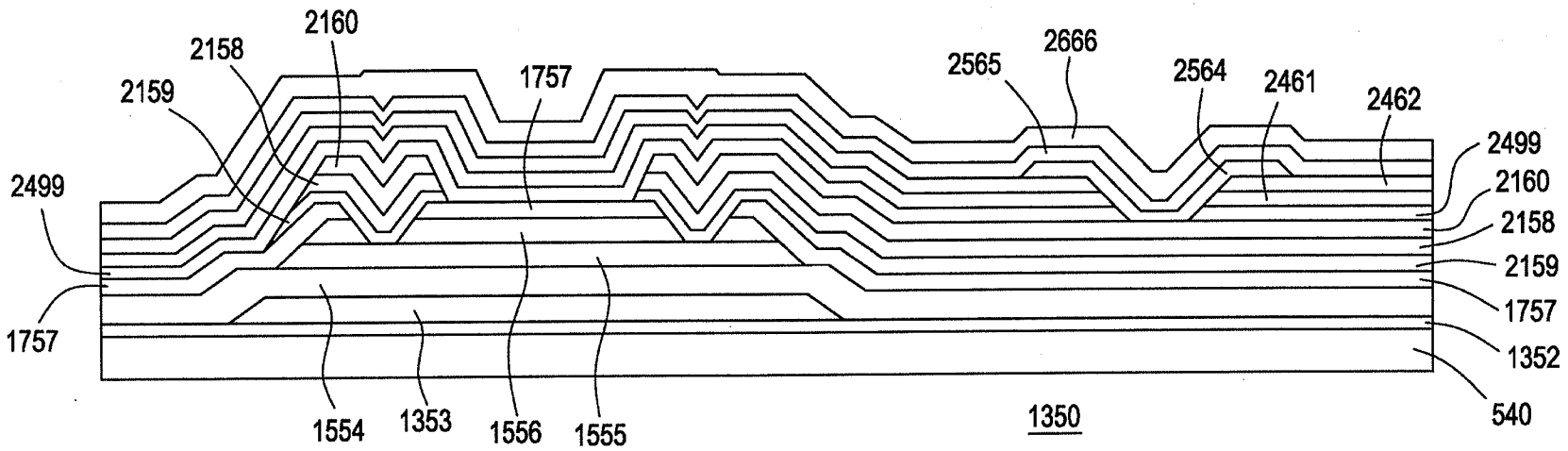

2160
2158
2159
1757
2565
2666
2564
2461
2462
2499
2499
2160
2158
2159
1757
1352
540
1757
1554
1353
1556
1555
1350

FIG. 26

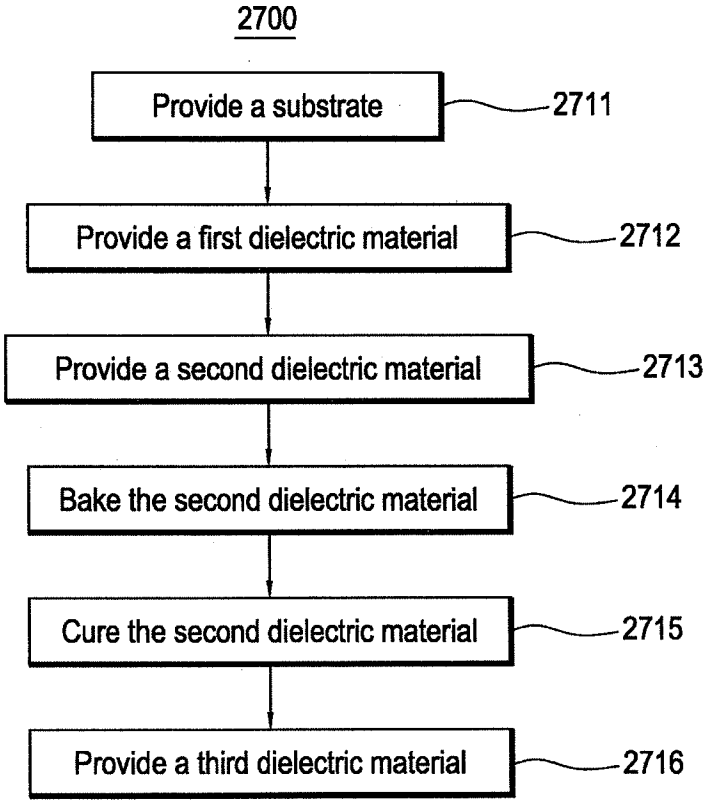

2700
Provide a substrate
2711
Provide a first dielectric material
2712
Provide a second dielectric material
2713
Bake the second dielectric material
2714
Cure the second dielectric material
2715
Provide a third dielectric material
2716

FIG. 27

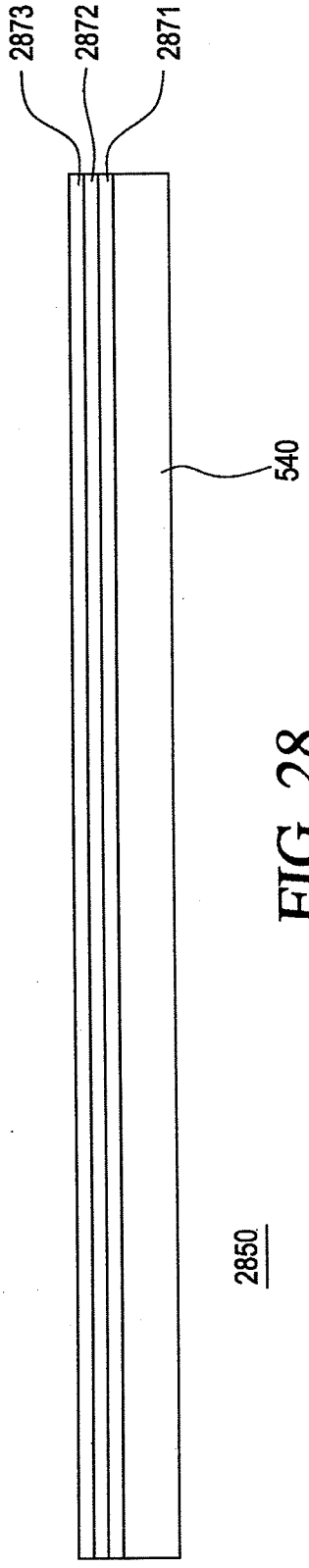


FIG. 28

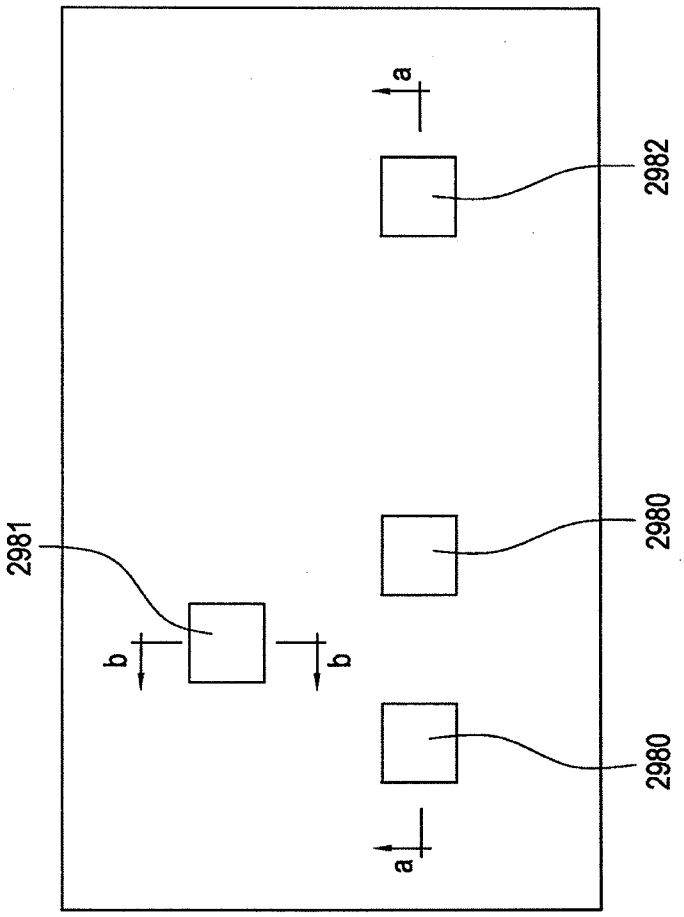


FIG. 29

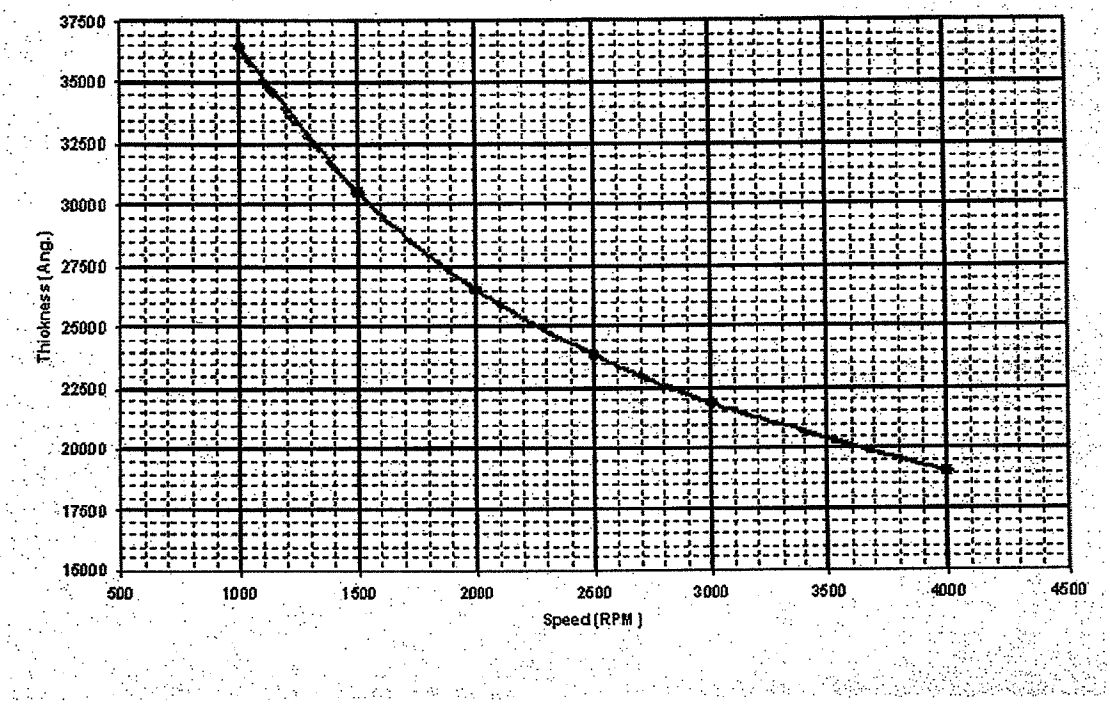

37500
35000
32500
30000
27500
25000
22500
20000
17500
15000
Thickness (Ang.)
500
1000
1500
2000
2500
3000
3500
4000
4500
Speed (RPM)

FIG. 30