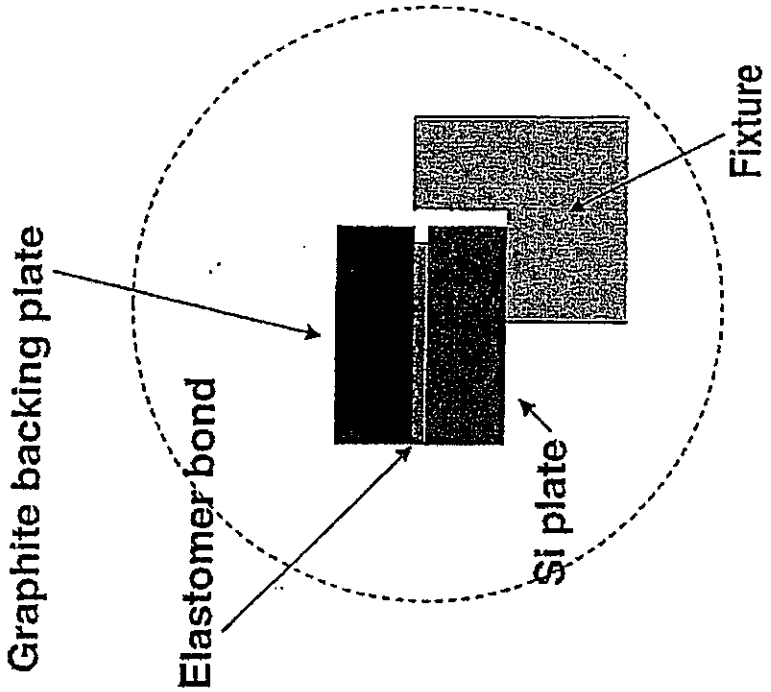


FIG. 1B

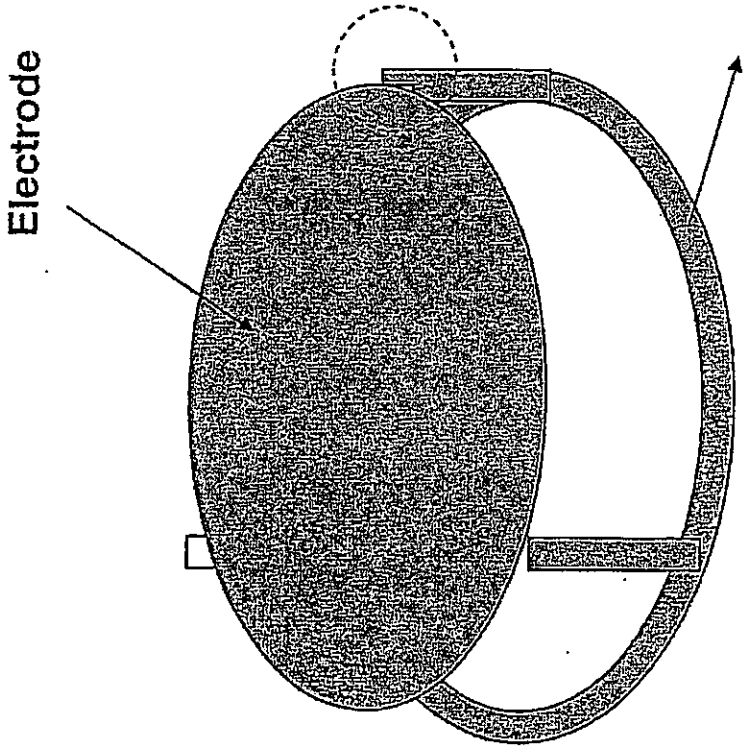


FIG. 1A

FIG. 1

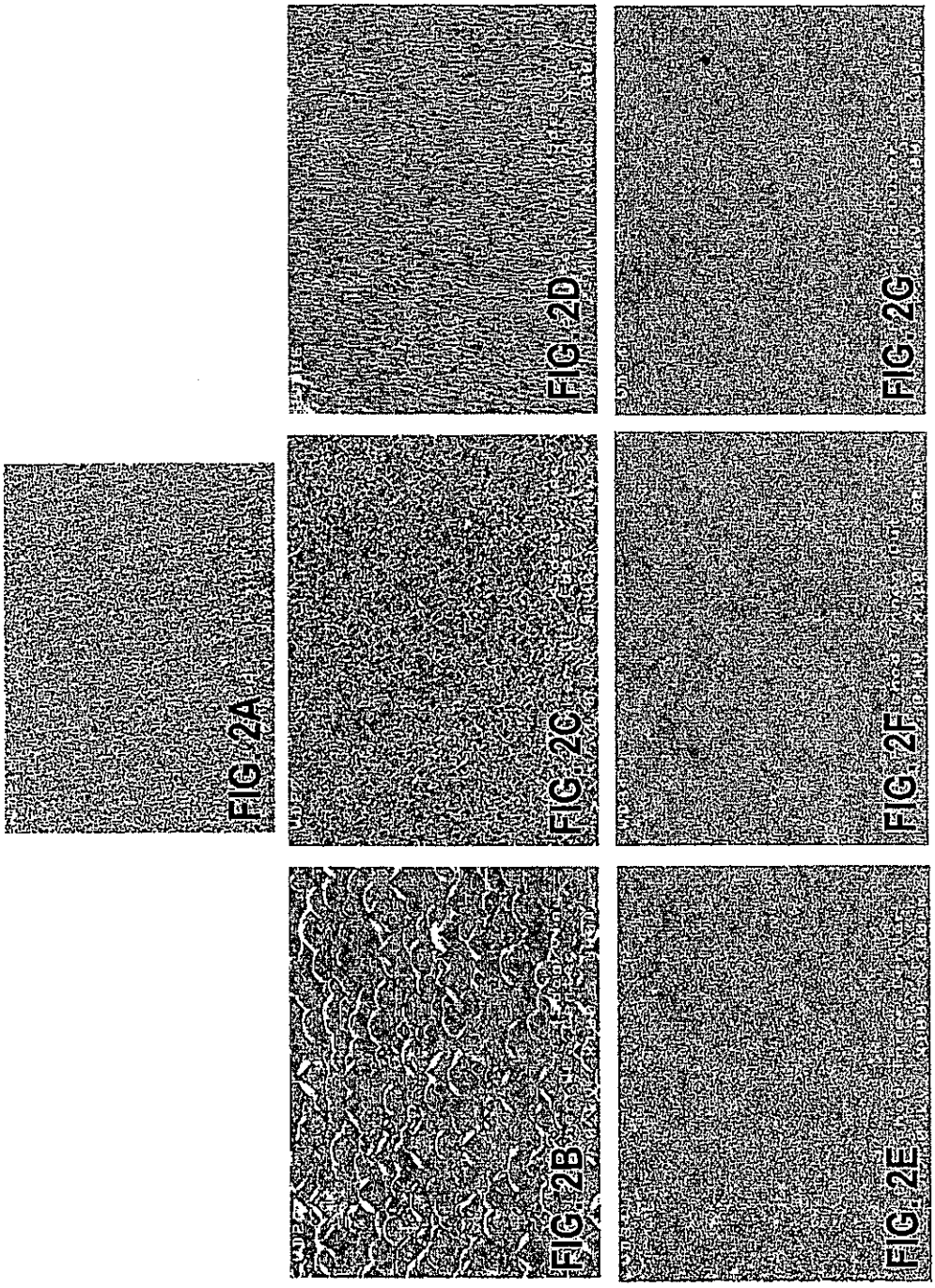


FIG. 2

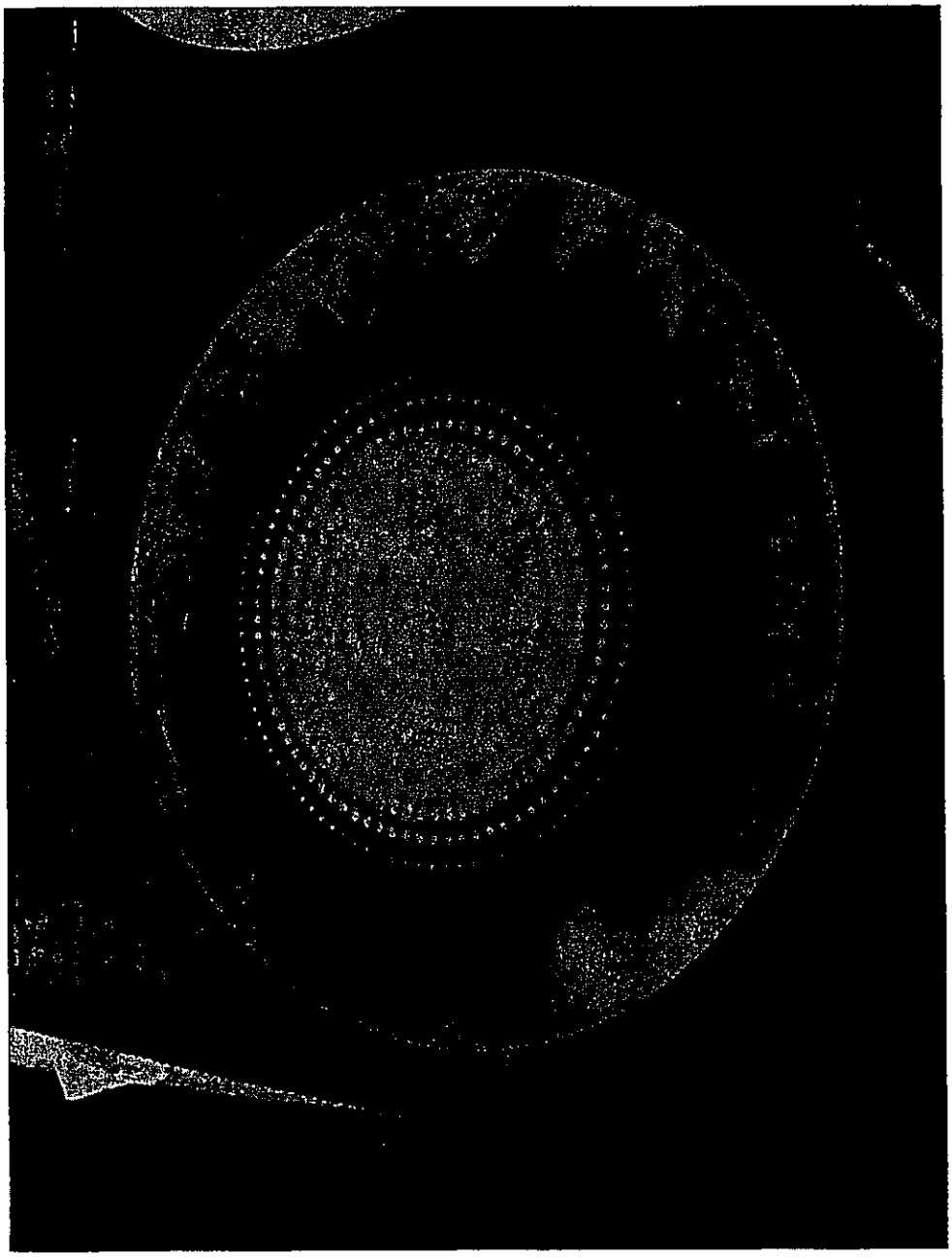


FIG. 3

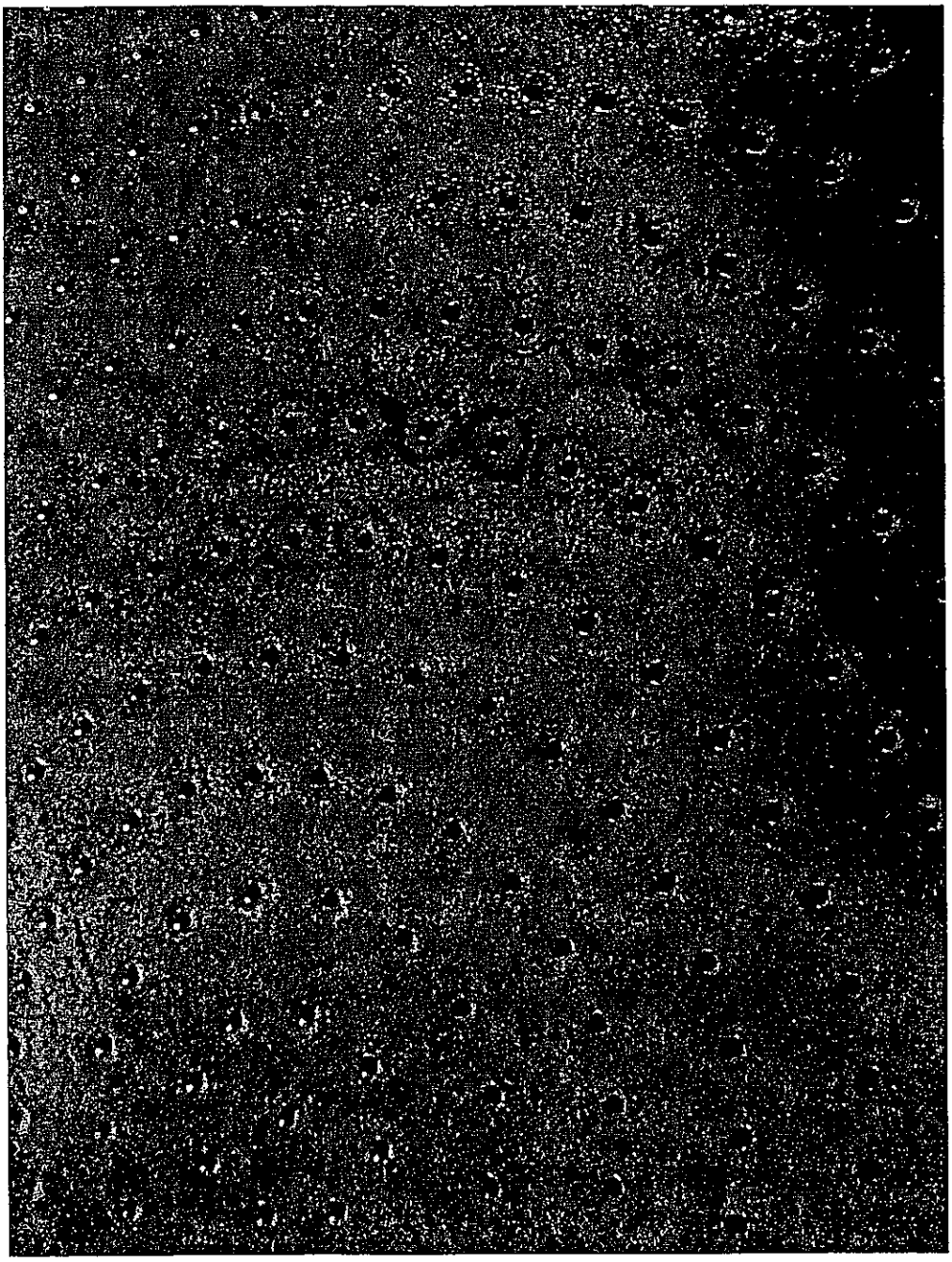


FIG. 4

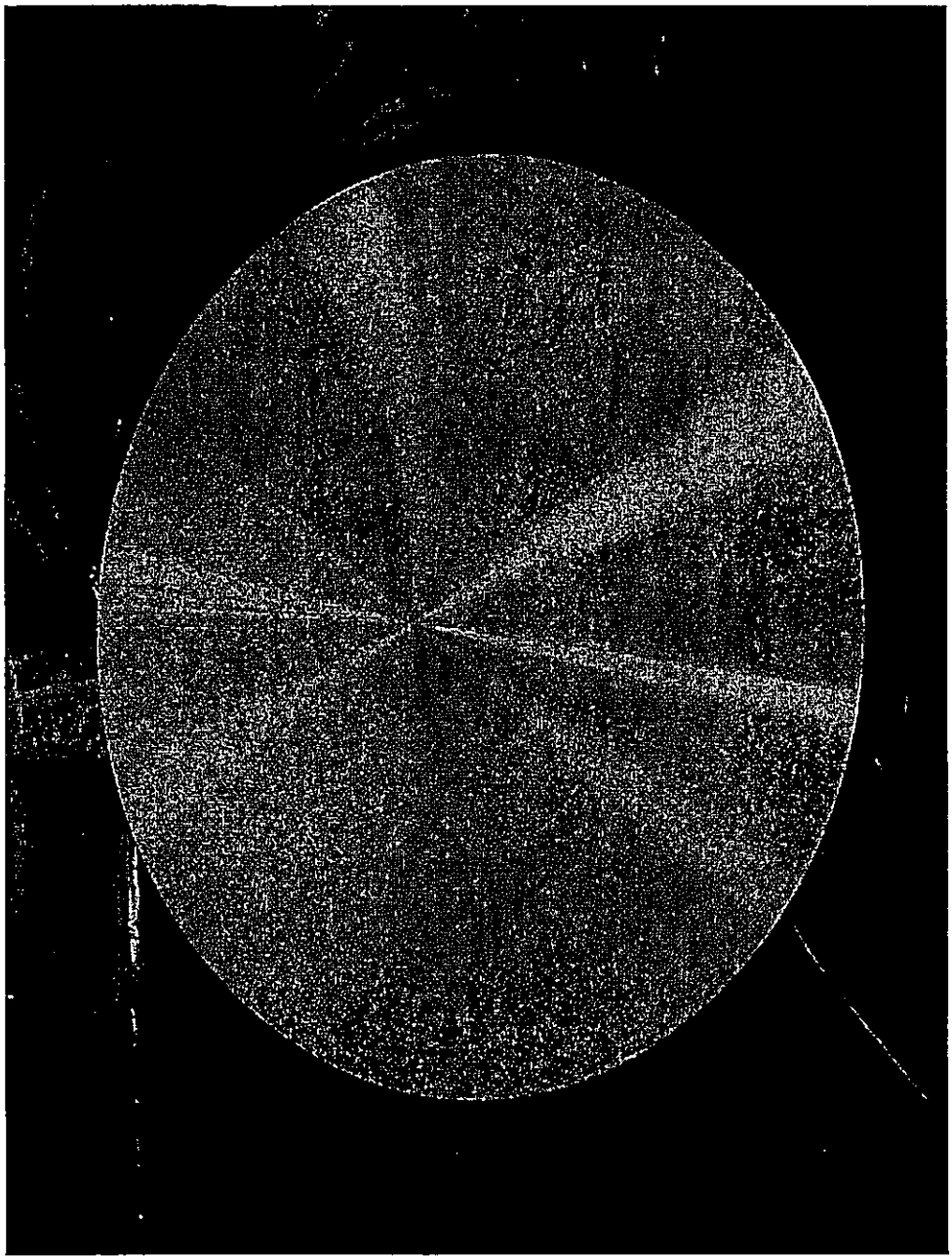


FIG. 5

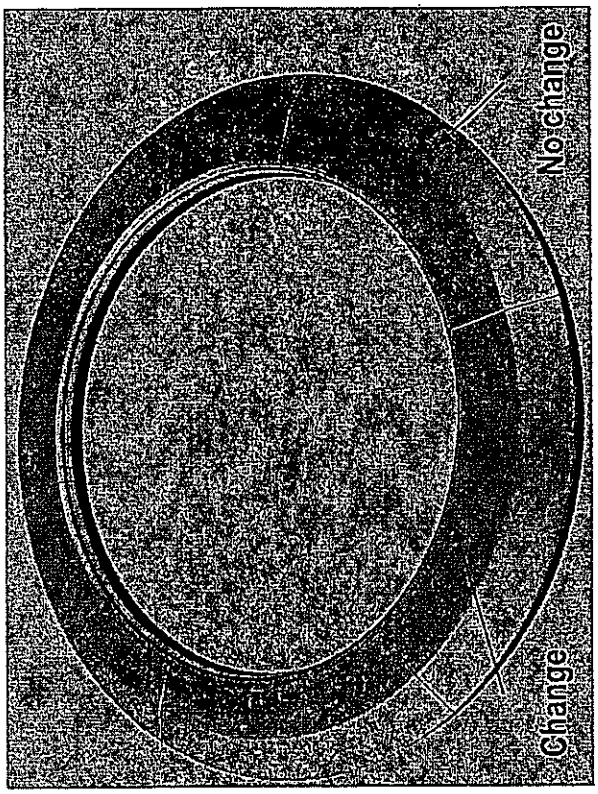


FIG. 6B

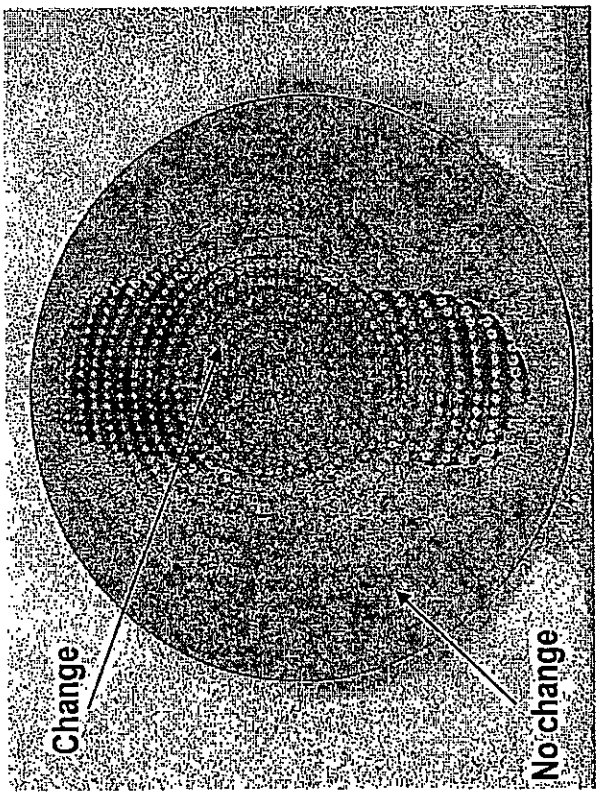


FIG. 6A

FIG. 6

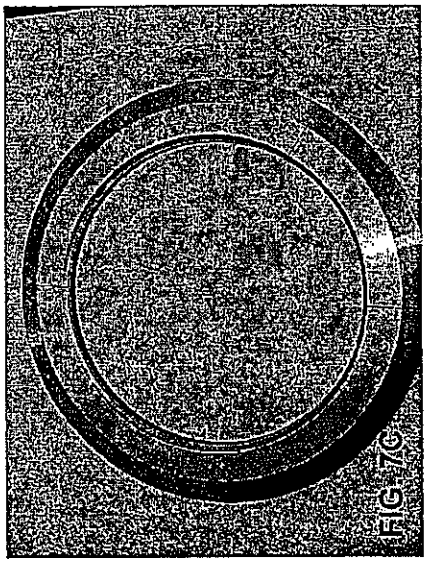


FIG. 7C

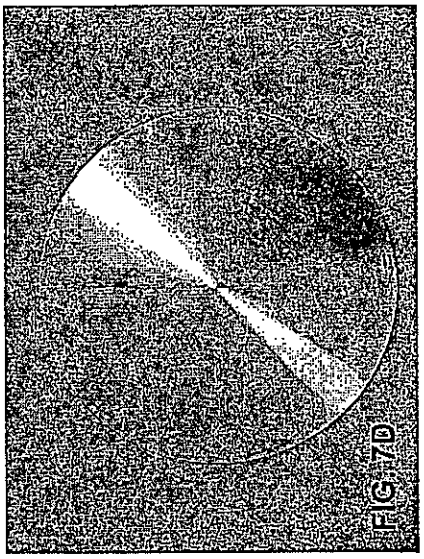


FIG. 7D

FIG. 7

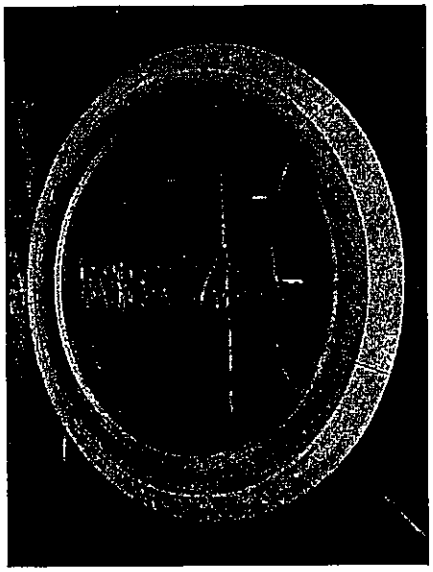


FIG. 7A

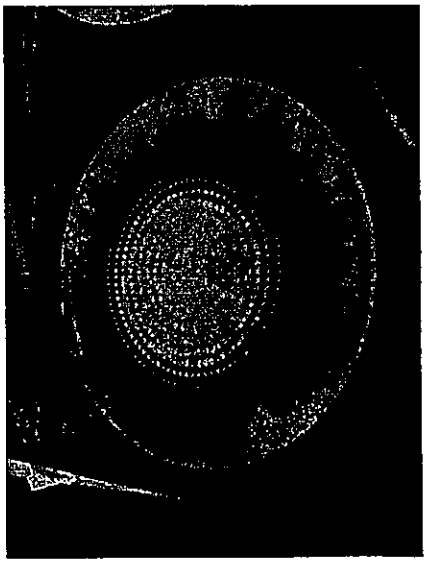


FIG. 7B

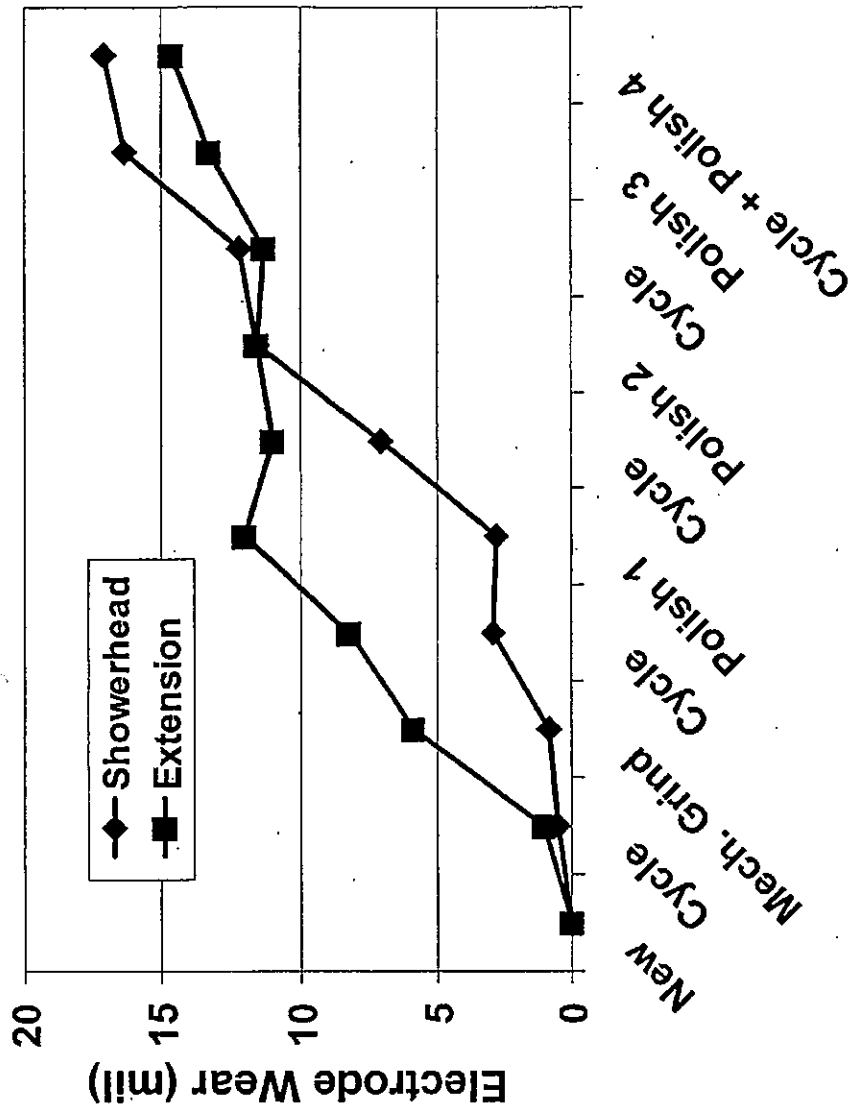

Electrode Wear (mil)
0
5
10
15
20
Showerhead
Extension
New
Cycle
Mech. Grind
Cycle
Polish 1
Cycle
Polish 2
Cycle
Polish 3
Cycle + Polish 4

FIG. 8

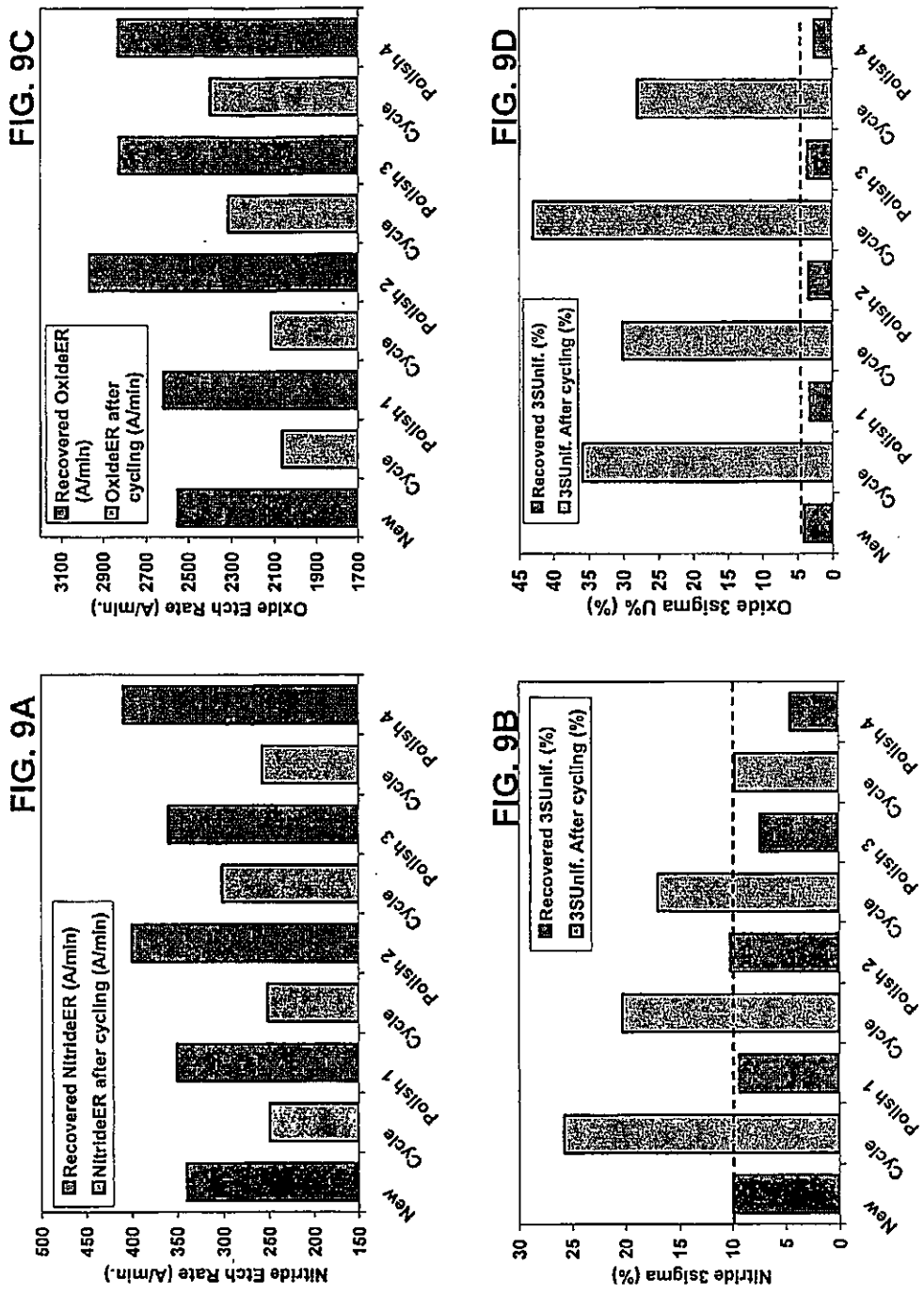
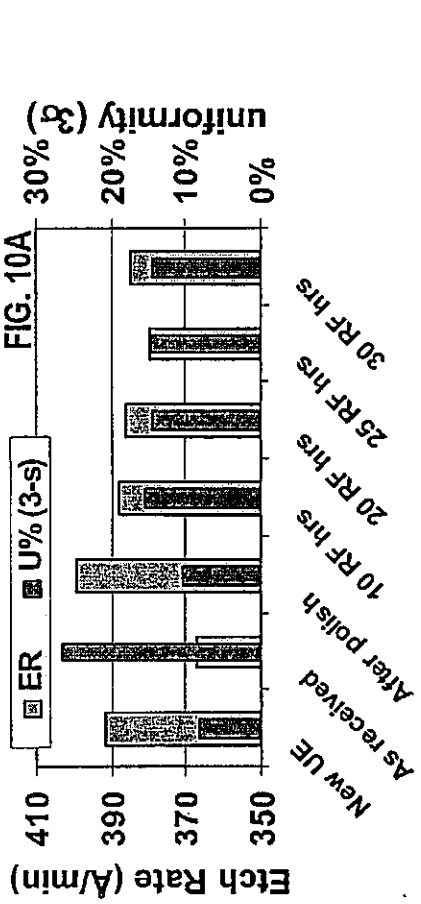

FIG. 9A
Nitride Etch Rate (A/min.)
Recovered NitrideER (A/min)
NitrideER after cycling (A/min)
FIG. 9B
Nitride 3sigma (%)
Recovered 3SUnif. (%)
3SUnif. After cycling (%)
FIG. 9C
Oxide Etch Rate (A/min.)
Recovered OxideER (A/min)
OxideER after cycling (A/min)
FIG. 9D
Oxide 3sigma U% (%)
Recovered 3SUnif. (%)
3SUnif. After cycling (%)
New
Cycle
Polish 1
Cycle
Polish 2
Cycle
Polish 3
Cycle
Polish 4

FIG. 9


FIG. 10A
uniformity (3σ)
30%
20%
10%
0%
ER
U% (3-s)
410
390
370
350
Etch Rate (Å/min)
New UE
As received
After polish
10 RF hrs
20 RF hrs
25 RF hrs
30 RF hrs

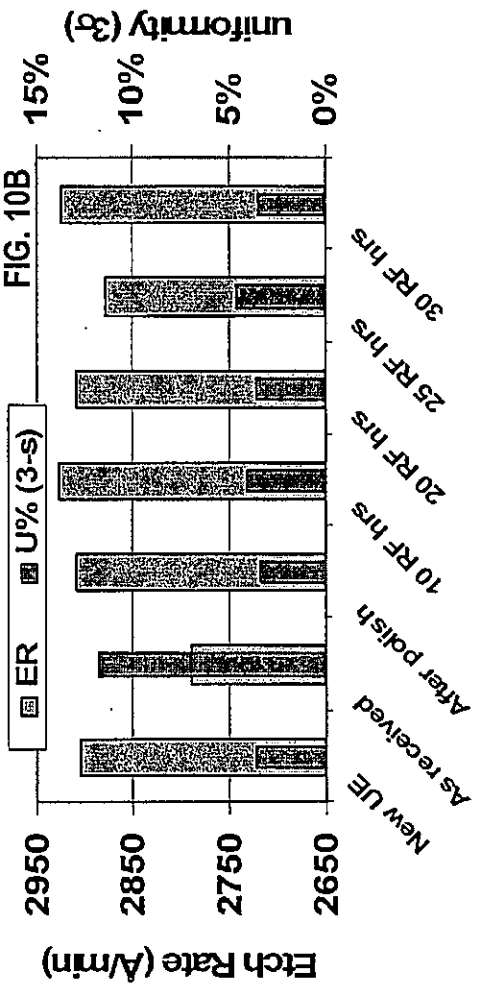
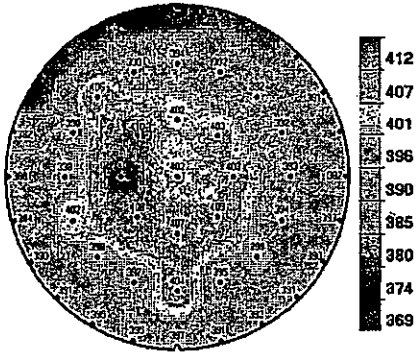

FIG. 10B
uniformity (3σ)
15%
10%
5%
0%
ER
U% (3-s)
2950
2850
2750
2650
Etch Rate (Å/min)
New UE
As received
After polish
10 RF hrs
20 RF hrs
25 RF hrs
30 RF hrs

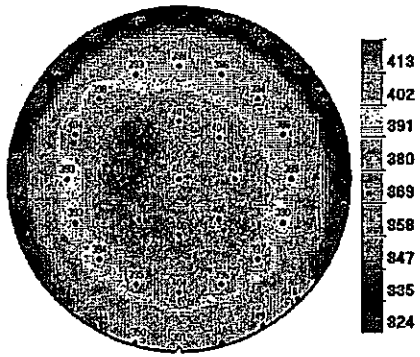
FIG. 10

FIG. 11A



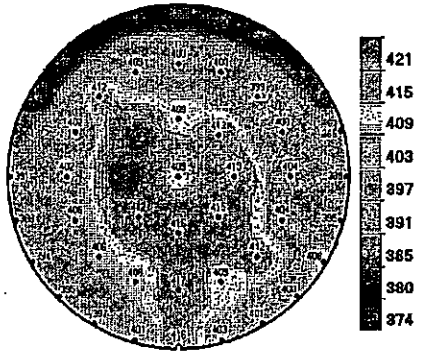
Mean : 392 Å/min
3-sigma: 32 Å/min (8.1 %)
Range : 43 Å/min (11.0 %)

FIG. 11B



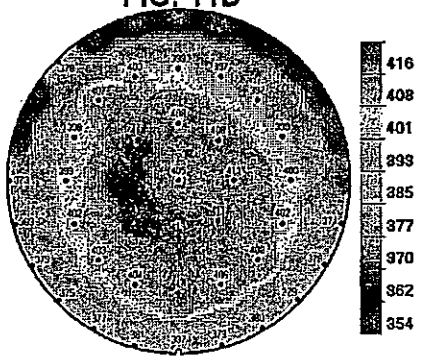
Mean : 367 Å/min
3-sigma: 97 Å/min (26.5 %)
Range : 89 Å/min (24.2 %)

FIG. 11C



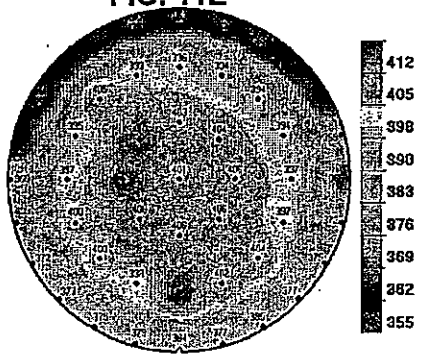
Mean : 399 Å/min
3-sigma: 41 Å/min (10.4 %)
Range : 48 Å/min (11.9 %)

FIG. 11D



Mean : 388 Å/min
3-sigma: 60 Å/min (15.5 %)
Range : 62 Å/min (16.0 %)

FIG. 11E



Mean : 385 Å/min
3-sigma: 56 Å/min (14.5 %)
Range : 57 Å/min (14.8 %)

FIG. 11