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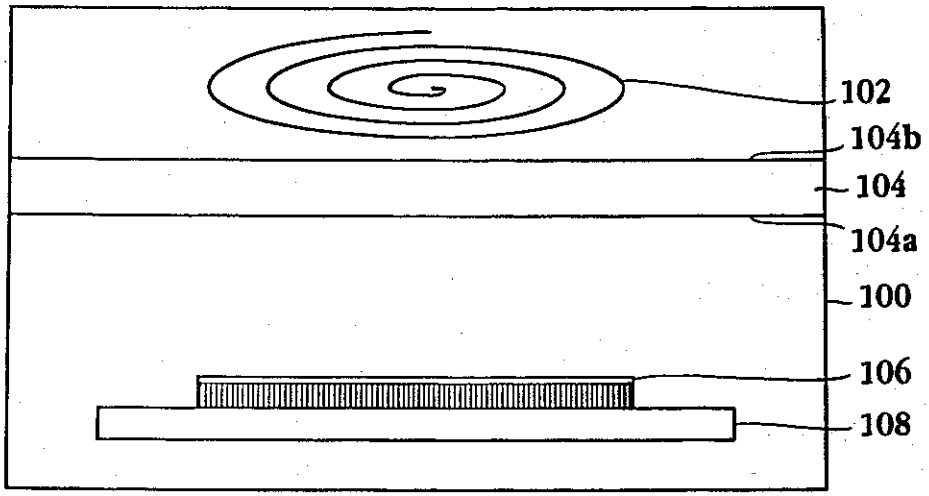


Fig. 1A (prior art)

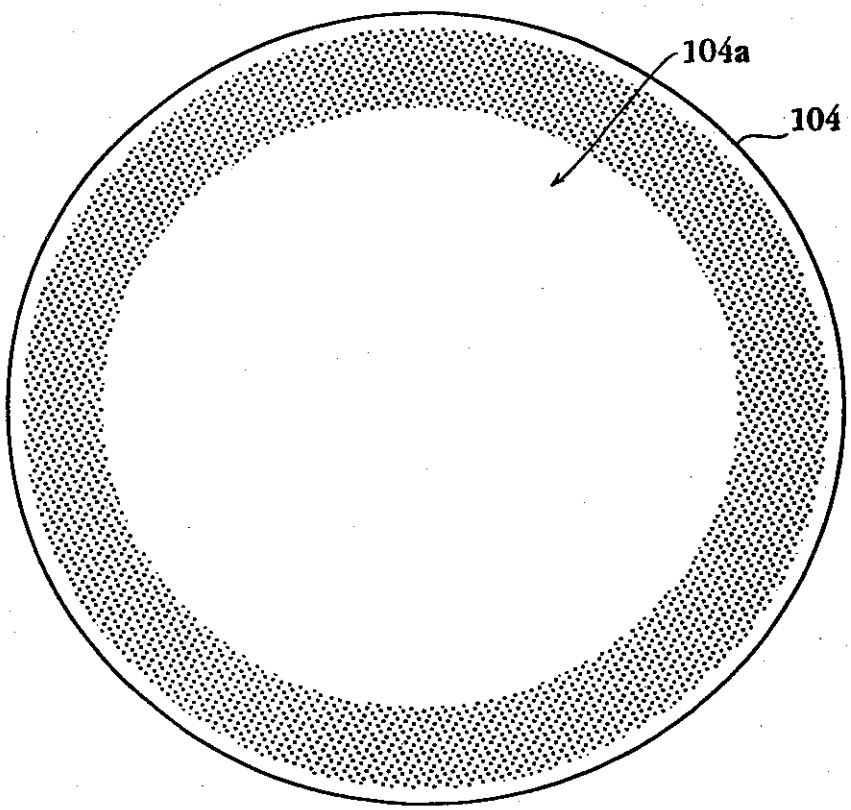


Fig. 1B (prior art)

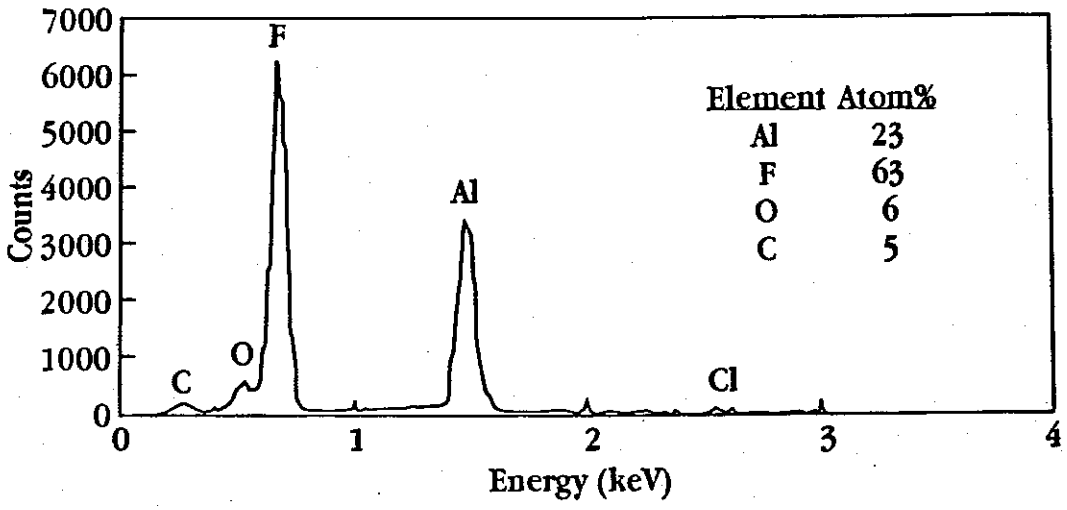

7000
6000
5000
4000
3000
2000
1000
0
Counts
F
Al
C
O
Cl
Element Atom%
Al 23
F 63
O 6
C 5
0
1
2
3
4
Energy (keV)

Fig. 2

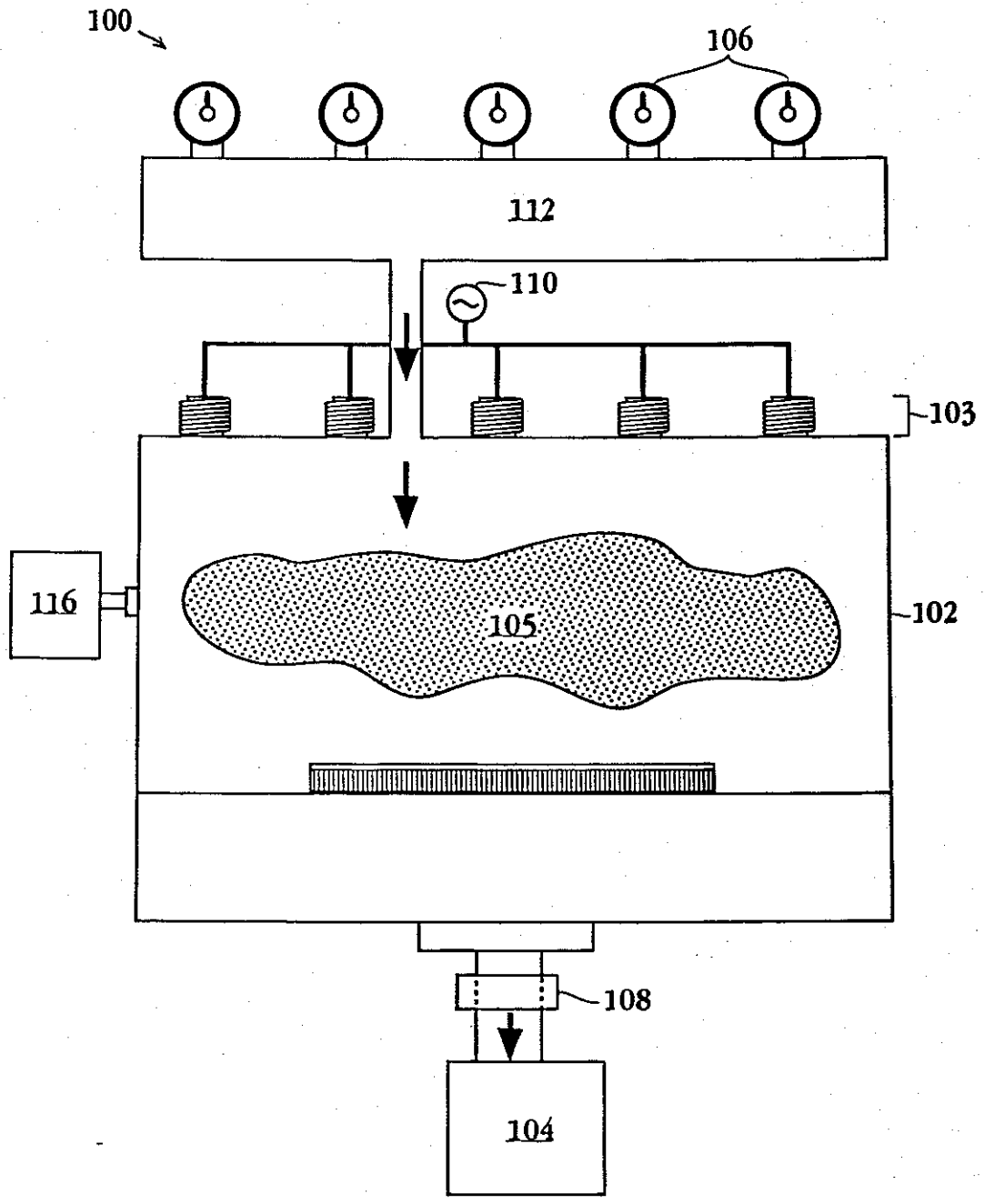


Fig. 3

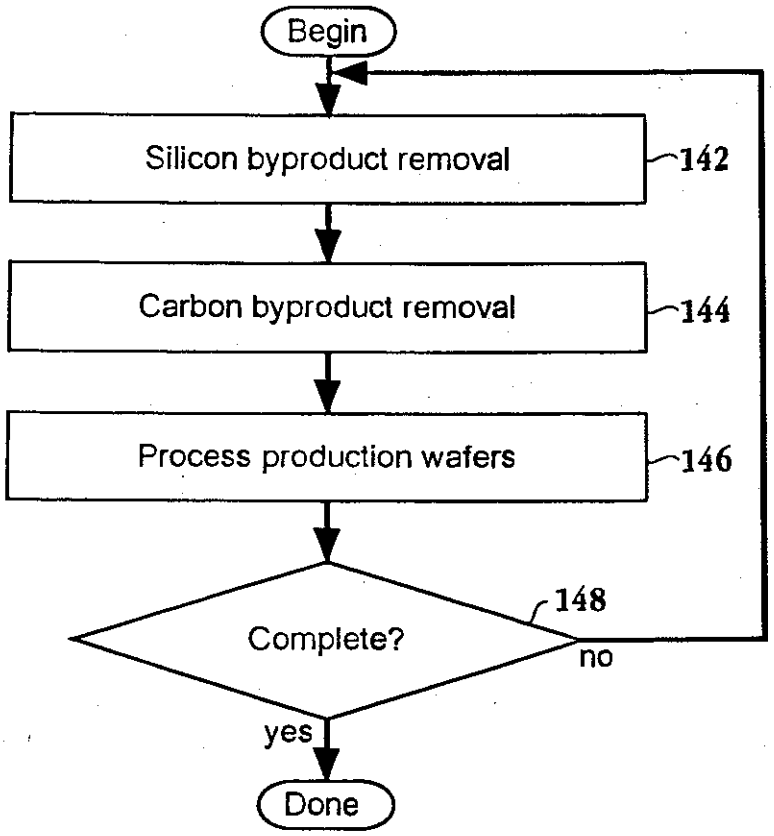

Begin
Silicon byproduct removal
142
Carbon byproduct removal
144
Process production wafers
146
Complete?
148
no
yes
Done

Fig. 4

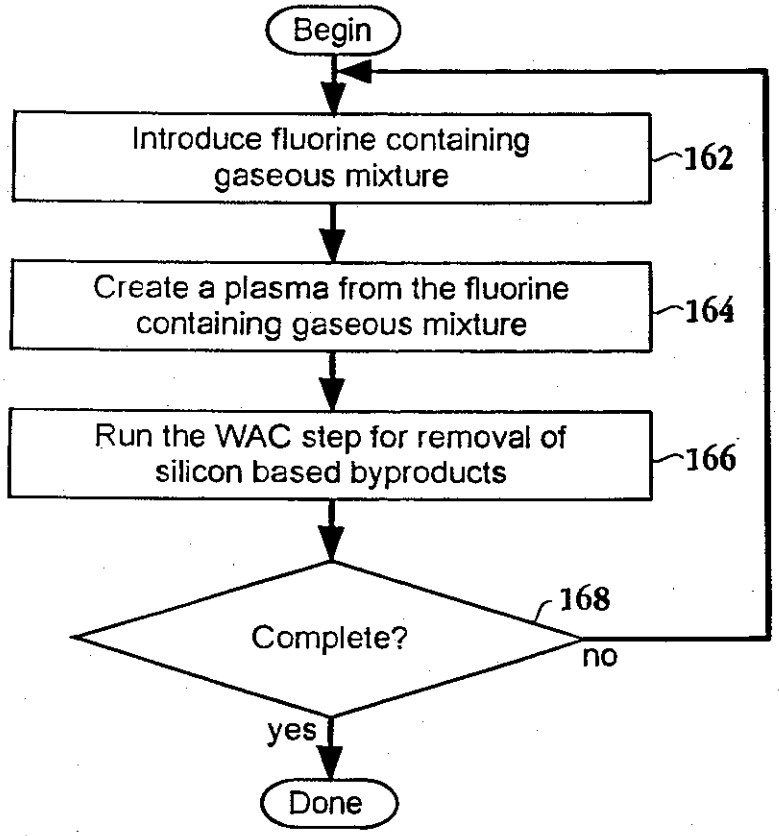

Begin
Introduce fluorine containing gaseous mixture
162
Create a plasma from the fluorine containing gaseous mixture
164
Run the WAC step for removal of silicon based byproducts
166
Complete?
168
no
yes
Done

Fig. 5

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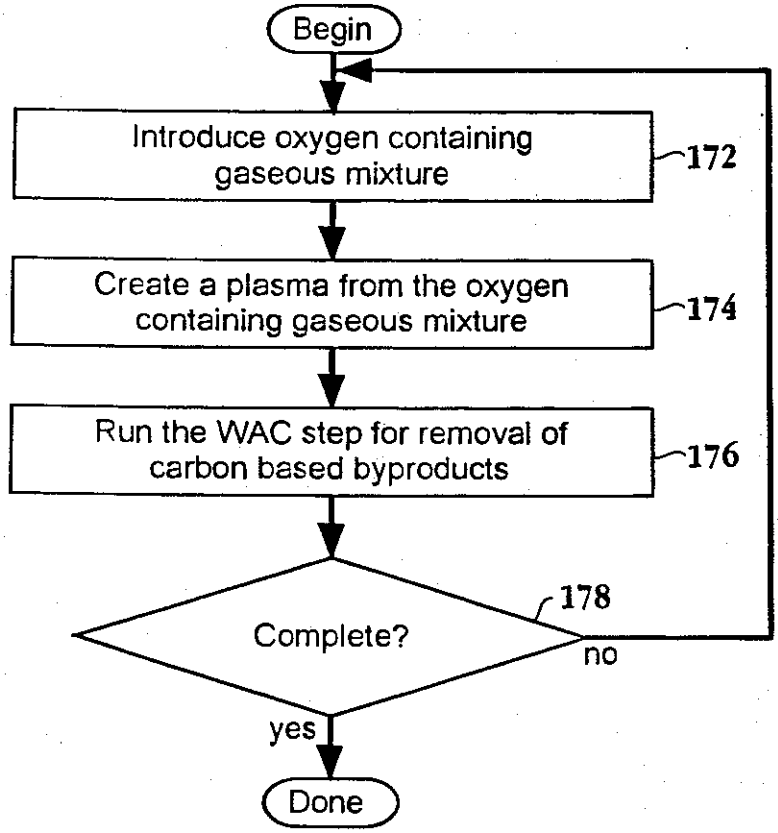


Fig. 6

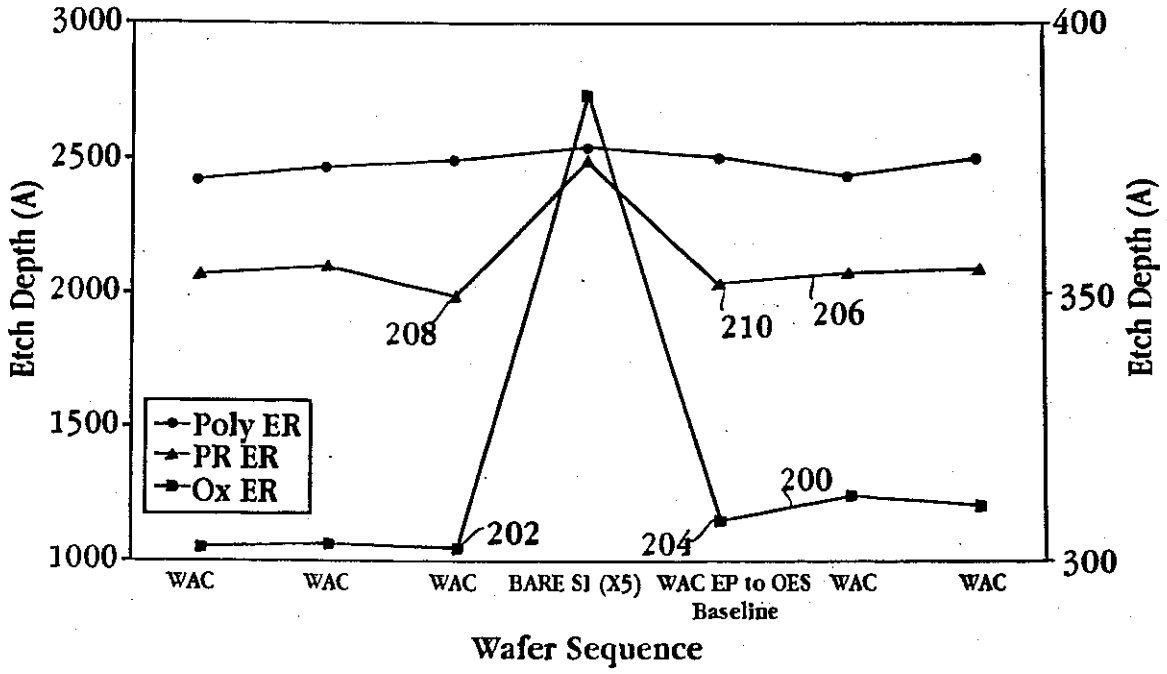

3000
2500
2000
1500
1000
Etch Depth (A)
400
350
300
Etch Depth (A)
Poly ER
PR ER
Ox ER
208
210
206
202
204
200
WAC
WAC
WAC
BARE SI (X5)
WAC EP to OES Baseline
WAC
WAC
Wafer Sequence

Fig. 7

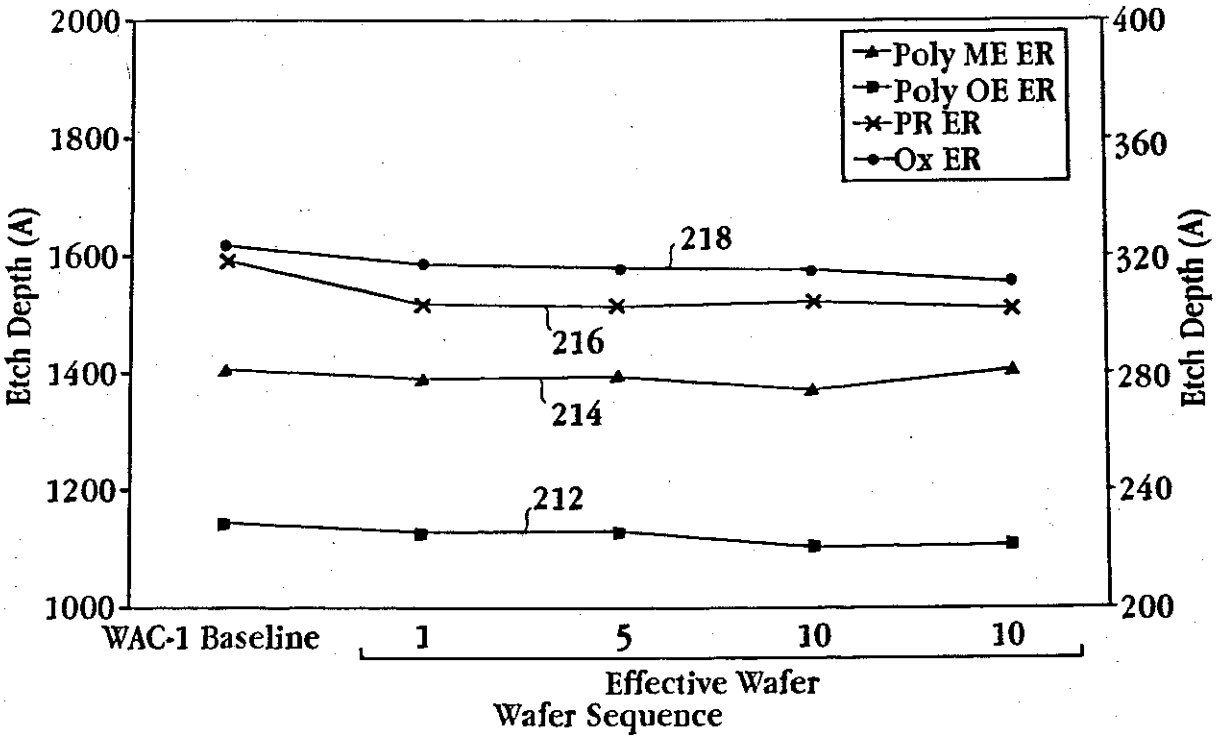

2000
1800
1600
1400
1200
1000
Etch Depth (A)
400
360
320
280
240
200
Etch Depth (A)
Poly ME ER
Poly OE ER
PR ER
Ox ER
218
216
214
212
WAC-1 Baseline
1
5
10
10
Effective Wafer
Wafer Sequence

Fig. 8

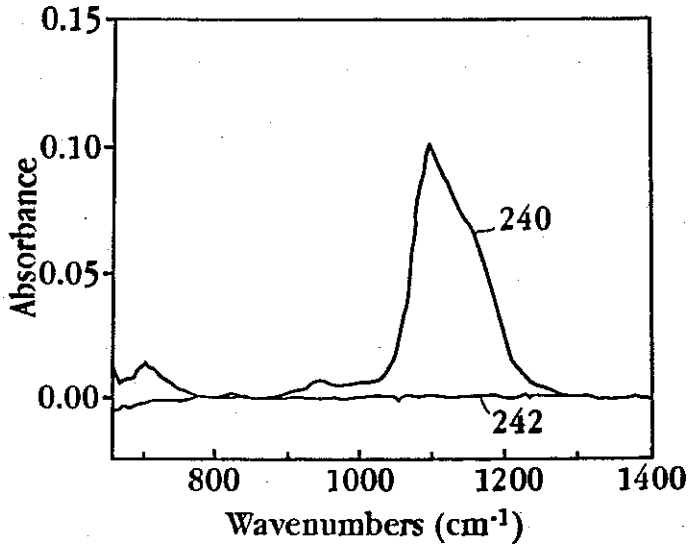

0.15
0.10
0.05
0.00
Absorbance
240
242
800
1000
1200
1400
Wavenumbers (cm-1)

Fig. 9

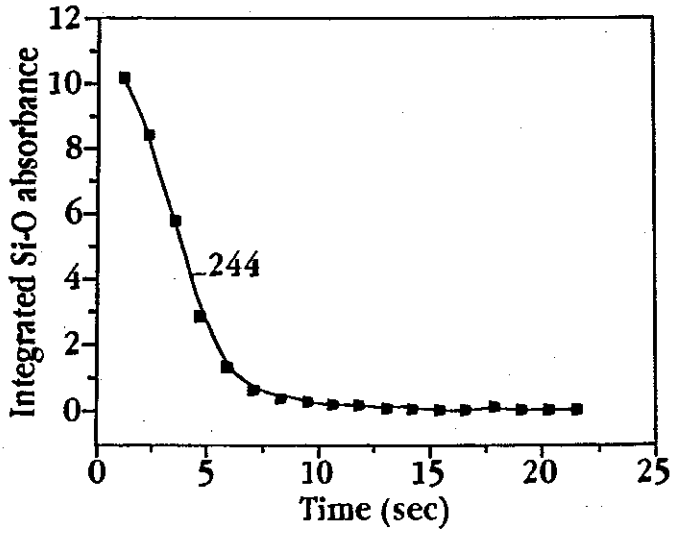

12
10
8
6
4
2
0
Integrated Si-O absorbance
244
0
5
10
15
20
25
Time (sec)

Fig. 10

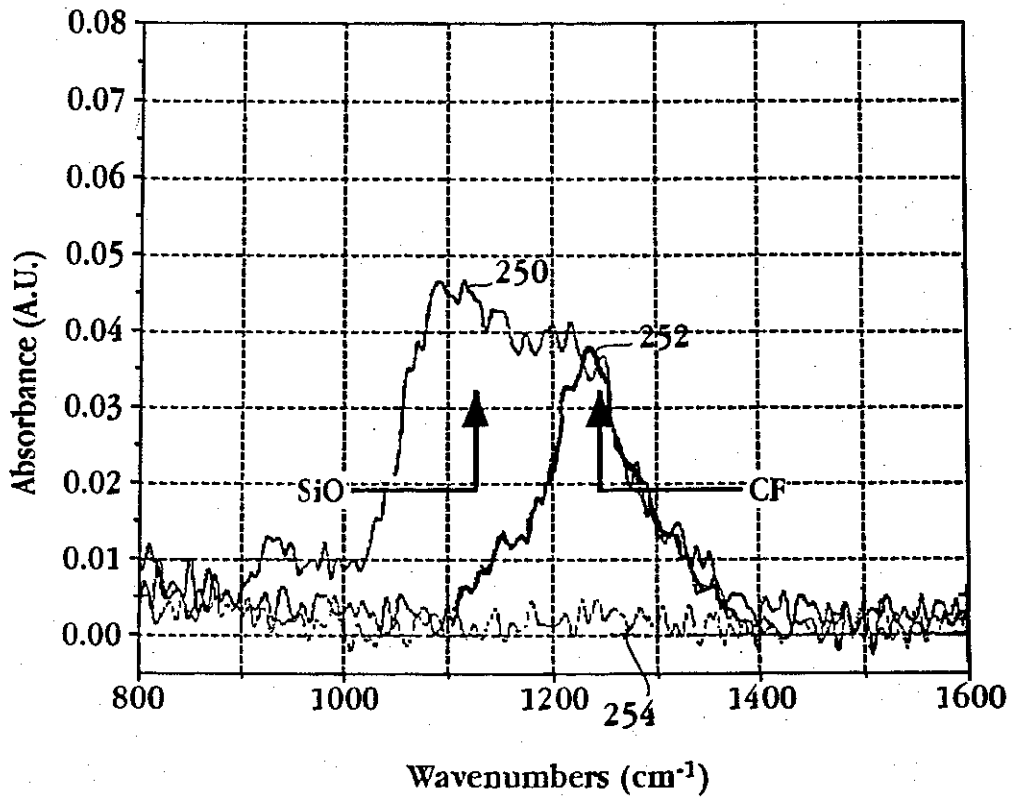

0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
Absorbance (A.U.)
250
252
SiO
CF
254
800
1000
1200
1400
1600
Wavenumbers (cm-1)

Fig. 11