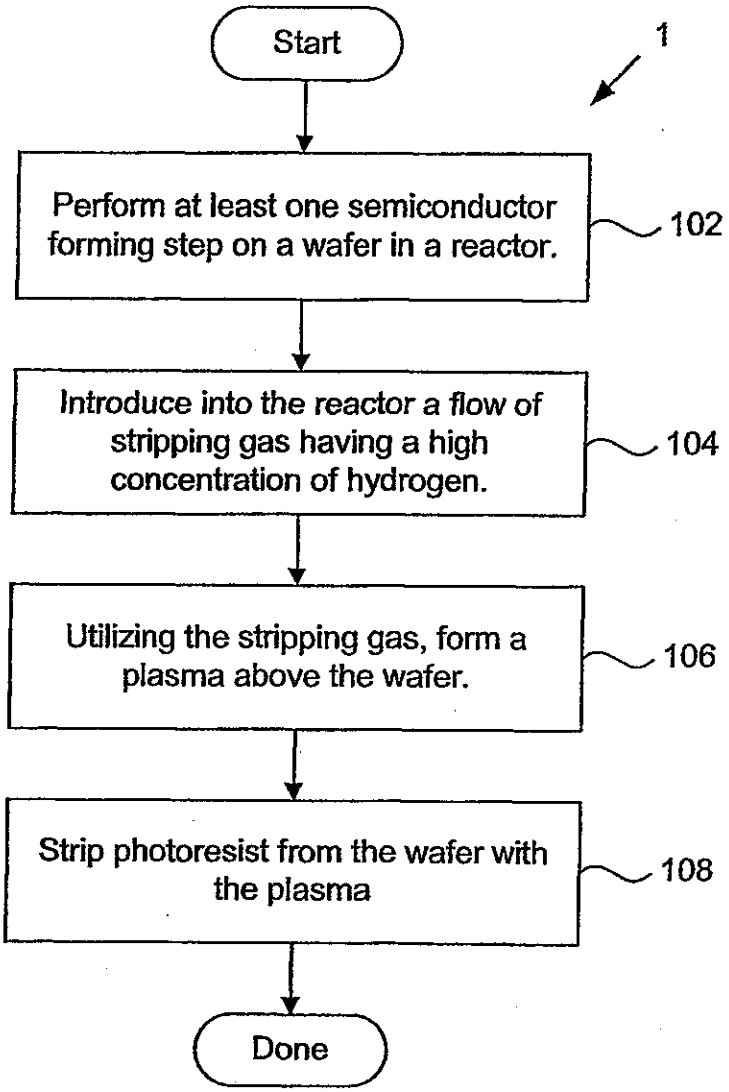

Start
1
Perform at least one semiconductor forming step on a wafer in a reactor.
102
Introduce into the reactor a flow of stripping gas having a high concentration of hydrogen.
104
Utilizing the stripping gas, form a plasma above the wafer.
106
Strip photoresist from the wafer with the plasma
108
Done

FIG. 1

	HP (100% WAP Cpntrol)			XLE (gap 1.30)		Exelan (30%WAP control)	
Total Flows (SCCM)	at 0%	at 50%	at 100%	Chamber	WAP	at 0%	at 100%
200	41	56	87	24	60	57	75
400	72	104	159	40	102	102	135
600	98	143	222	56	140	139	187
800	123	180	279	68	174	173	234
1000	145	212	332	80	204		272
1200	163		372	96	234		
1400	180	263	410	108	263		
1600	197		447	122	285		
1800	214		483	136	311		
20000	231	332	*	150	333		
22000	250			166	362		
24000	268			184	383		
26000	287	407		202	414		

WAP

FIG. 2

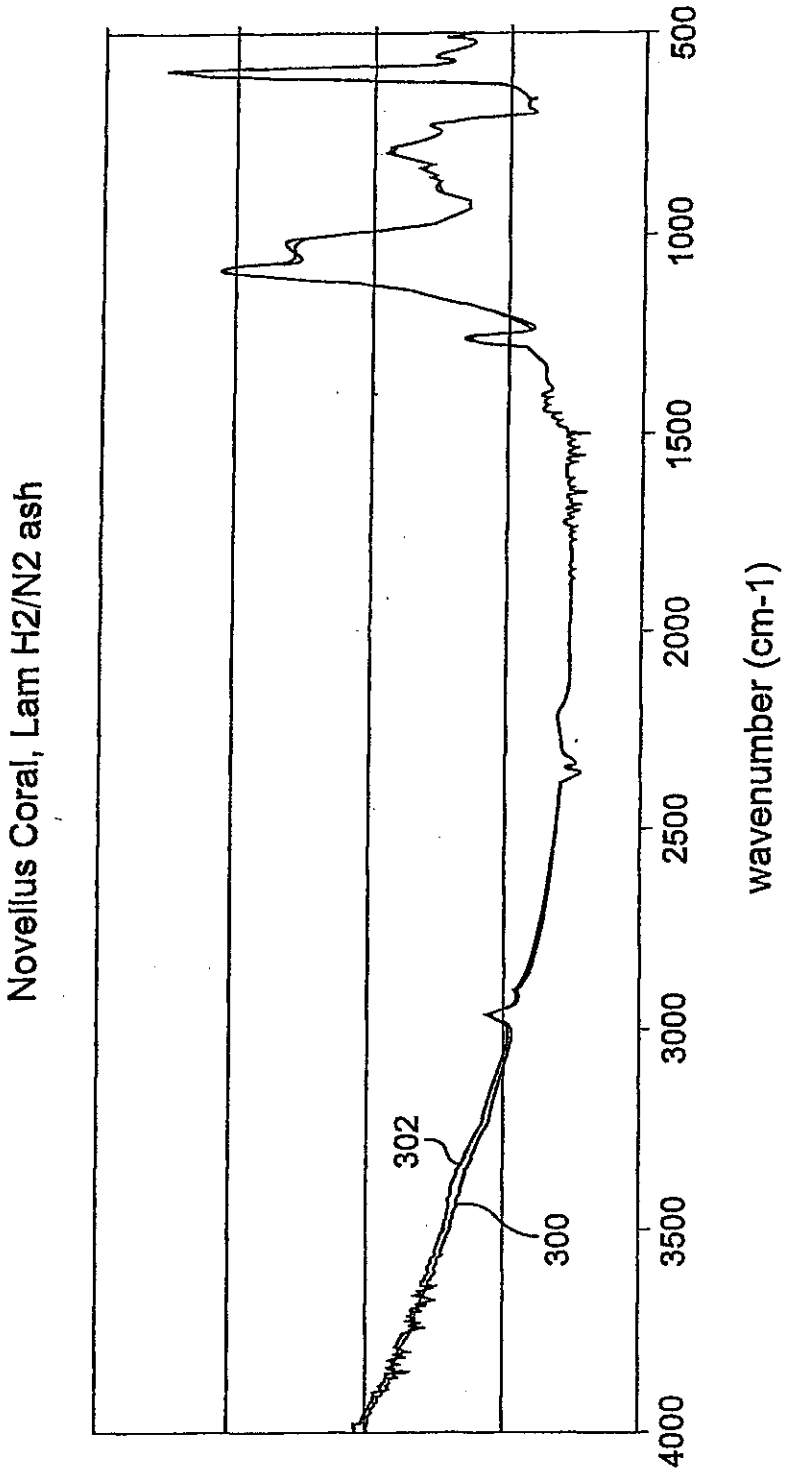

Novellus Coral, Lam H2/N2 ash
wavenumber (cm-1)
500
1000
1500
2000
2500
3000
3500
4000
302
300

FIG. 3

test	purpose	pressure	toppw	botpw	H2	N2	CF4	He	ER	sigma	+/- unif
1	power	200	500	500	180	180	0	15	2354	6.81	10.54
2	power	200	1250	1500	180	180	0	15	4522	11	15.77
3	control	200	750	1000	180	180	0	15	3408	7.29	10.21
4	ratio	200	750	1000	180	90	0	15	2806	5.5	7.84
5	ratio	200	750	1000	90	180	0	15	3060	7.21	10.75
6	total flow	200	750	1000	100	100	0	15	2644	5.96	8.51
7	total flow	500	750	1000	180	180	0	15	3630	6.66	8.65
8	high flow	120	500	500	800	800	0	15	3666	5.02	6.67
9	high flow	120	1250	1500	800	800	0	15	7539	6.38	8.06
10	high flow	120	500	500	800	800	0	15	4000	4.59	7.00
11	He	120	500	500	800	800	0	8	3824	5.14	7.14
12	He	120	500	500	800	800	0	2	4101	3.97	4.88
13	ratio	120	500	500	100	800	0	15	3104	4.82	8.49

FIG. 4A

Factor	ER change (A/min)	Condition	Fixed Factors
H2/N2 ratio	-254	0.5 -> 2.0	total=270, pressure=200, power 750/1000
H2+N2 total	764	200 -> 360	ratio=1:1, pressure=200, power 750/1001
pressure	222	200-> 500	ratio=1:1, total=380, power 750/1002
power (top/bot)	1054	500/500->750/1000	ratio=1:1, total=380, pressure=200
	1114	750/1000->1250/1500	
flow+pressure	1312	360sccm->1600 & 200mT->120	power 500/500, ratio=1:1
	3016	360sccm->1600 & 200mT->120	power 1250/1500, ratio=1:1
backside He	<200	15T-->8T-->2T	power 500/500, ratio=1:1, H2+N2=1600

FIG. 4B

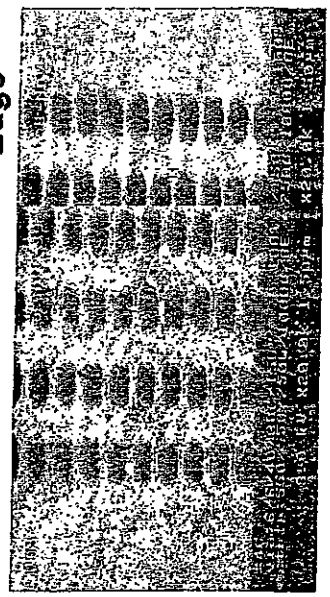


FIG. 5B

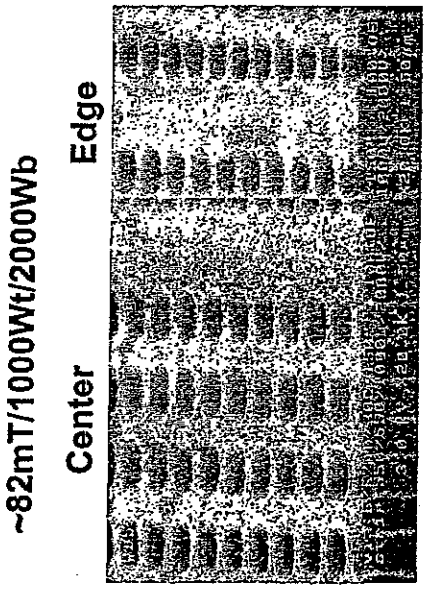


FIG. 5C

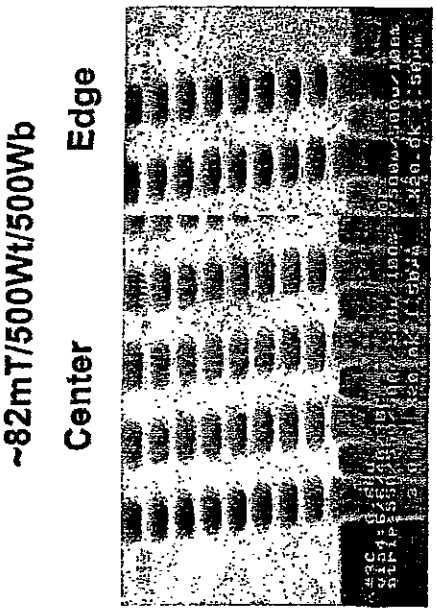


FIG. 5A

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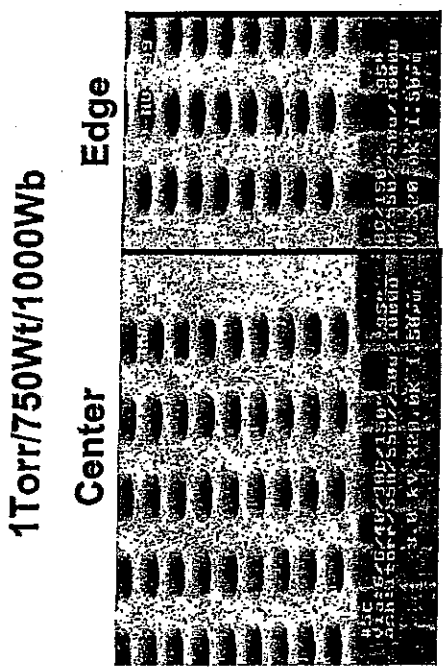


FIG. 6B

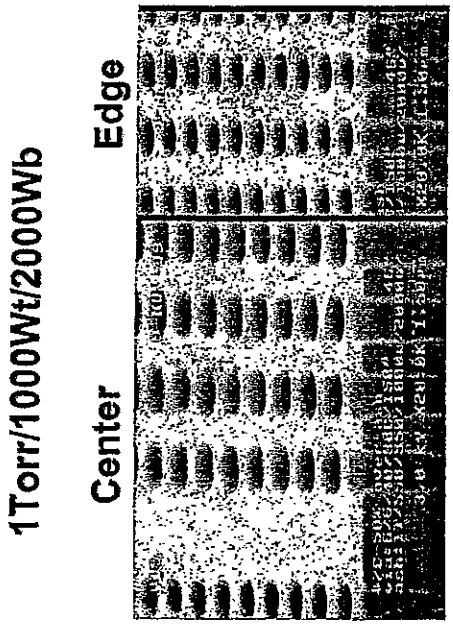


FIG. 6A