Supporting information for:

A Mass Spectrometrical Surface Chemistry Study of AlN ALD from TDMAA and NH_3.

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Film growth

Table S1: *raw data for Fig. 1a) b) and c) for saturation curves, temperature window and linear growth for the plasma process*

TDMAA pulse	GPC	Error bar	NH3 pulse	GPC	Error bar
s	Å/cycle		s	Å/cycle	
	TDMAA pulse	5% of GPC		NH3 pulse	5% of GPC
4	1.04	0.052	12	1.04	0.052
6	1.06	0.053	15	1.09	0.0545
8	1.08	0.054	18	1.01	0.0505

Temperature	GPC	Error bar
° C	Å/cycle	5% of GPC
125	0.98	0.049
150	1.02	0.051
200	1.04	0.052
250	1.08	0.054
275	1.38	0.069
300	1.8	0.09
350	2.04	0.102
400	2.3	0.115

Number of ALD cycles	Thickness	Error bar
	Å	5% of Thickness
300	360	18
400	450	22.5
500	540	27
1000	990	49.5

Table S2: *raw data for Fig. 2a) b) and c) for saturation curves, temperature window and linear growth for the thermal process*

TDMAA pulse	GPC	Error bar	NH3 pulse	GPC	Error bar
s	Å/cycle	5% of GPC	s	Å/cycle	5% of GPC
	TDMAA pulse			NH3 pulse	
0	0	0	0	0	0
2	0.72	0.036	6	0.75	0.0375
4	0.79	0.0395	12	0.82	0.041
6	0.78	0.039	15	0.84	0.042
			18	0.84	0.042

Temperature	GPC	Error bar
° C	Å/cycle	5% of GPC
125	0.58	0.029
150	0.78	0.039
200	0.82	0.041
225	0.8	0.04
250	0.84	0.042
300	1.32	0.066
350	1.52	0.076
375	1.36	0.068
400	1.26	0.063

Number of ALD cycles	Thickness	Error bar
	Å	5% of Thickness
300	270	13.5
400	335	16.75
500	420	21
1000	800	40

TDMAA-NH_3 residual gas analysis: mass spectrometry

Table S3: *raw data for Fig. 3 for the survey scan combining the background where no precursor is pulse together with the plasma and the thermal process. An offset of 0.1 was used between each process for visual clarity when making graphical plots. This helps to explain why we chose specific m/z values for monitoring with time.*

m/z	Partial pressure	m/z	m/z	Plasma	m/z	m/z	Thermal
0 offset	mbar		0.1 offset	mbar		0.2 offset	mbar
	Background			Plasma			Thermal
1	1.2151E-10	1	1.1	6.6566E-11	1	1.2	2.4958E-10
2	1.7766E-8	2	2.1	1.34568E-8	2	2.2	1.6503E-8
3	1.5323E-11	3	3.1	6.90632E-11	3	3.2	-1.91136E-11
4	1.2622E-10	4	4.1	1.2116E-9	4	4.2	8.6752E-10
5	2.9437E-11	5	5.1	9.4464E-11	5	5.2	-1.42912E-10
6	-4.382E-11	6	6.1	2.25928E-10	6	6.2	1.52E-10
7	2.9437E-11	7	7.1	1.39632E-10	7	7.2	1.82648E-10
8	7.2585E-12	8	8.1	1.57104E-10	8	8.2	-2.1684E-10
9	-1.4786E-12	9	9.1	1.8388E-11	9	9.2	-4.96264E-11
10	-1.6264E-11	10	10.1	9.568E-11	10	10.2	3.98944E-11
11	1.1963E-11	11	11.1	3.7072E-11	11	11.2	1.36944E-10
12	8.0515E-11	12	12.1	4.51744E-10	12	12.2	3.65584E-10
13	5.4976E-11	13	13.1	7.09824E-10	13	13.2	4.0268E-10
14	1.0749E-7	14	14.1	8.6144E-8	14	14.2	8.6048E-8
15	1.1041E-9	15	15.1	1.18376E-8	15	15.2	4.94768E-8
16	8.843E-10	16	16.1	8.6144E-8	16	16.2	8.6048E-8
17	1.6464E-8	17	17.1	8.6144E-8	17	17.2	8.6048E-8
18	3.3949E-8	18	18.1	8.6144E-8	18	18.2	8.6048E-8
19	1.1748E-10	19	19.1	7.894E-10	19	19.2	5.2164E-10
20	5.7354E-8	20	20.1	8.6144E-8	20	20.2	8.6048E-8
21	8.6026E-12	21	21.1	1.46752E-10	21	21.2	1.11672E-10
22	2.1372E-11	22	22.1	-5.37936E-11	22	22.2	2.13288E-10
23	-5.5111E-12	23	23.1	1.1936E-11	23	23.2	6.51648E-11
24	3.4814E-11	24	24.1	1.07536E-13	24	24.2	-1.2248E-10
25	6.5057E-11	25	25.1	3.15651E-10	25	25.2	1.84928E-10
26	3.0163E-10	26	26.1	1.74398E-9	26	26.2	1.24047E-9
27	1.4811E-9	27	27.1	1.10496E-8	27	27.2	1.03024E-8
28	1.0749E-7	28	28.1	8.6144E-8	28	28.2	8.6048E-8
29	3.7486E-8	29	29.1	8.6144E-8	29	29.2	8.6048E-8
30	1.0564E-9	30	30.1	9.2392E-9	30	30.2	9.3488E-9
31	3.0096E-10	31	31.1	1.16872E-9	31	31.2	8.2648E-10
32	1.1666E-9	32	32.1	4.64152E-9	32	32.2	4.31232E-9
33	4.4895E-11	33	33.1	2.94744E-10	33	33.2	2.8588E-10
34	9.1941E-11	34	34.1	3.18E-10	34	34.2	2.2216E-10
35	2.1372E-11	35	35.1	2.06168E-10	35	35.2	1.95976E-11
36	1.6041E-9	36	36.1	2.55984E-10	36	36.2	2.55984E-10
37	6.3041E-11	37	37.1	3.20288E-10	37	37.2	1.1288E-10
38	3.937E-10	38	38.1	2.64056E-9	38	38.2	2.82984E-9
39	6.1482E-10	39	39.1	3.71136E-9	39	39.2	3.0132E-9
40	1.0749E-7	40	40.1	8.6144E-8	40	40.2	8.6048E-8
41	1.258E-9	41	41.1	7.06176E-9	41	41.2	4.916E-9
42	5.2745E-10	42	42.1	3.44072E-9	42	42.2	2.79408E-9
43	1.2708E-9	43	43.1	7.31016E-9	43	43.2	5.07784E-9
44	2.3837E-9	44	44.1	1.42248E-8	44	44.2	1.29184E-8
45	1.9141E-10	45	45.1	2.3633E-9	45	45.2	2.2135E-9
46	1.1143E-10	46	46.1	3.9932E-10	46	46.2	1.4192E-10
47	7.5139E-11	47	47.1	1.10192E-10	47	47.2	-6.71008E-11
48	2.406E-11	48	48.1	2.74856E-10	48	48.2	-5.19112E-11
49	6.0353E-11	49	49.1	1.92056E-10	49	49.2	1.56032E-10
50	9.1941E-11	50	50.1	3.5376E-10	50	50.2	2.30096E-10

Table S4: *raw data for Fig. 4 for the m/z = 44 and m/z = 45 created during the plasma and thermal processes*

PLASMA				THERMAL		
Time (ms)	**m/z = 44**	**m/z = 45**		**Time (ms)**	**m/z = 44**	**m/z = 45**
	pressure (mbar)	**pressure (mbar)**			**pressure (mbar)**	**pressure (mbar)**
7664	7.333E-10	1.211E-10		7664	7.0048E-10	8.0073E-11
27168	6.1914E-10	8.6956E-11		27168	6.4192E-10	8.6612E-11
46673	6.1582E-10	7.3325E-11		46673	6.4252E-10	7.0628E-11
66178	5.7001E-10	8.5064E-11		66178	6.3494E-10	6.2327E-11
85682	5.6816E-10	5.9532E-11		85682	6.1341E-10	6.0874E-11
105187	1.3082E-9	3.2822E-10		105187	7.1647E-10	2.4137E-10
126773	7.4655E-10	1.5443E-10		124692	7.2701E-10	1.154E-10
148359	6.2555E-10	9.8007E-11		144196	6.3533E-10	7.365E-11
167863	6.0538E-10	7.7322E-11		163701	6.239E-10	7.5423E-11
187368	5.9382E-10	6.3818E-11		183206	6.0832E-10	4.9437E-11
206873	5.9575E-10	9.6459E-11		202710	6.1694E-10	5.4193E-11
226378	6.0515E-10	8.3495E-11		222215	6.4535E-10	7.0585E-11
245882	5.8261E-10	6.2388E-11		241720	6.4617E-10	7.2041E-11
265387	5.8583E-10	5.4677E-11		261224	6.3067E-10	7.2847E-11
284892	5.7864E-10	6.0427E-11		280729	6.0955E-10	4.2903E-11
304396	9.5328E-10	1.9873E-10		300234	6.2117E-10	2.1353E-10
323901	6.6707E-10	1.1011E-10		319738	7.2454E-10	1.0871E-10
343406	6.0115E-10	6.6237E-11		339243	6.2459E-10	6.9234E-11
362910	5.6163E-10	6.093E-11		358748	6.2626E-10	5.884E-11
382415	5.6097E-10	4.0797E-11		378253	6.321E-10	5.2661E-11
401920	5.4774E-10	7.1652E-11		397757	6.2882E-10	5.2383E-11
421424	5.8908E-10	7.4887E-11		417262	6.4554E-10	6.4522E-11
440929	5.9719E-10	6.6765E-11		436767	6.4737E-10	6.9923E-11
460434	5.6198E-10	4.4756E-11		456272	6.4646E-10	6.7093E-11
479938	5.8139E-10	5.1125E-11		475776	6.3652E-10	5.2495E-11
499443	9.3248E-10	1.4988E-10		495281	6.3353E-10	2.3347E-10
518948	6.4198E-10	9.9398E-11		514786	7.6645E-10	1.1026E-10
538452	5.7376E-10	6.1385E-11		534290	6.4161E-10	7.1664E-11
557957	5.7344E-10	5.9337E-11		553795	6.4817E-10	7.7169E-11
577462	5.812E-10	5.8439E-11		573300	6.1892E-10	5.7659E-11
596966	5.6898E-10	6.4176E-11		592804	6.4334E-10	5.8956E-11
616471	6.0836E-10	7.0843E-11		612309	6.8603E-10	8.1939E-11
635976	5.8613E-10	6.6991E-11		631814	6.6653E-10	7.1975E-11
655480	5.8269E-10	6.1004E-11		651319	6.5948E-10	6.5833E-11
674985	5.8365E-10	7.6539E-11		670823	6.3661E-10	6.2969E-11
694490	9.4692E-10	1.6288E-10		690328	6.3149E-10	2.5891E-10
713995	6.4922E-10	7.9135E-11		709833	8.0426E-10	1.0879E-10
733499	5.8544E-10	7.2022E-11		729337	6.5618E-10	7.7236E-11
753004	5.6797E-10	6.5716E-11		748842	6.4565E-10	8.116E-11
772509	5.9209E-10	5.5394E-11		768347	6.4311E-10	5.5396E-11
792013	5.6847E-10	7.2902E-11		787851	6.6411E-10	5.2534E-11
811518	6.2144E-10	5.4454E-11		807356	6.8176E-10	9.3948E-11
831023	6.0776E-10	6.8147E-11		826861	6.7316E-10	6.5615E-11
850528	5.9114E-10	5.3504E-11		846366	6.6692E-10	5.1856E-11
870032	5.8911E-10	6.1153E-11		865870	6.653E-10	6.0028E-11
889537	9.2141E-10	1.5804E-10		885375	6.5541E-10	2.748E-10
909042	6.5786E-10	8.8358E-11		904880	8.2608E-10	1.1869E-10
928546	5.9779E-10	5.7765E-11		924384	6.9418E-10	7.0074E-11
948051	5.6805E-10	5.156E-11		943889	6.6267E-10	6.1093E-11
967556	5.7615E-10	5.9548E-11		963394	6.6124E-10	5.9832E-11
987060	5.8028E-10	4.8675E-11		982899	6.5189E-10	4.8392E-11

Table S5: *raw data for Fig. 5 for the m/z = 29 and m/z = 16 created during both the plasma and thermal processes*

PLASMA		THERMAL		PLASMA		THERMAL	
Time (ms)	**m/z = 29**	**Time (ms)**	**m/z = 29**	**Time (ms)**	**m/z = 16**	**Time (ms)**	**m/z = 16**
	pressure (mbar)		**pressure (mbar)**		**pressure (mbar)**		**pressure (mbar)**
10766	2.6578E-8	10766	4.2166E-8	7664	9.0869E-10	7664	7.9846E-10
11788	2.6236E-8	11788	3.8775E-8	20667	9.3655E-10	20667	6.6559E-10
12809	2.5956E-8	12809	3.5963E-8	33670	7.5978E-10	33670	6.4118E-10
13831	2.5804E-8	13831	3.3526E-8	46673	7.5444E-10	46673	6.0975E-10
14852	2.5822E-8	14852	3.1713E-8	59676	7.1147E-10	59676	6.0572E-10
15874	2.679E-8	15874	3.0138E-8	72679	7.091E-10	72679	5.8691E-10
16895	2.7907E-8	16895	2.8902E-8	85682	6.7684E-10	85682	5.6426E-10
17917	2.8922E-8	17917	2.7955E-8	98685	6.5844E-10	98686	5.516E-10
18938	2.9863E-8	18938	2.7151E-8	111689	1.5463E-7	113770	2.685E-8
19960	3.0805E-8	19960	2.6497E-8	130397	1.0119E-7	125456	2.5428E-8
20981	3.1453E-8	20981	2.6081E-8	133000	5.5869E-8	128559	1.8477E-8
22003	3.2056E-8	22003	2.5655E-8	136624	3.4224E-8	131662	1.3951E-8
23024	3.2604E-8	23024	2.5228E-8	139727	2.368E-8	141266	6.9261E-9
24046	3.2929E-8	24046	2.4936E-8	142830	1.7746E-8	150870	4.9669E-9
25067	3.3116E-8	25067	2.486E-8	152435	9.6558E-9	159454	3.815E-9
26089	3.3466E-8	26089	2.4686E-8	159958	6.5597E-9	168037	3.1105E-9
27110	3.3725E-8	27110	2.5412E-8	169562	5.0273E-9	176620	2.6329E-9
28132	3.3806E-8	28132	2.6603E-8	178145	4.0623E-9	185203	2.3089E-9
29153	3.3905E-8	29153	2.7666E-8	186728	3.3946E-9	193786	1.9844E-9
30175	3.4062E-8	30175	2.8525E-8	195311	2.9409E-9	202369	1.808E-9
31196	3.4079E-8	31196	2.9399E-8	203895	2.6022E-9	210953	1.6103E-9
32218	3.4146E-8	32218	3.0218E-8	212478	2.3002E-9	219536	1.5222E-9
33239	3.4131E-8	33239	3.092E-8	221061	2.1219E-9	228119	1.3757E-9
34261	3.4175E-8	34261	3.144E-8	229644	1.9485E-9	236702	1.2932E-9
35282	3.419E-8	35282	3.1944E-8	238227	1.7549E-9	245285	1.1935E-9
36304	3.4161E-8	36304	3.233E-8	246810	1.6398E-9	253868	1.1228E-9
37325	3.4234E-8	37325	3.2608E-8	255393	1.5137E-9	262451	1.076E-9
38347	3.4282E-8	38347	3.2794E-8	263976	1.3443E-9	271034	1.0394E-9
39368	3.4234E-8	39368	3.2991E-8	272559	1.3711E-9	279618	9.8791E-10
40390	3.4243E-8	40390	3.3089E-8	281143	1.2477E-9	288201	9.3779E-10
41411	3.4308E-8	41411	3.3239E-8	289726	1.2135E-9	296784	8.6577E-10
42433	3.4247E-8	42433	3.3317E-8	298309	1.1639E-9	313949	2.2845E-8
43454	3.4251E-8	43454	3.3339E-8	306892	1.1224E-9	325635	1.6746E-8
44476	3.4224E-8	44476	3.3373E-8	317556	1.0334E-7	335240	7.759E-9
45497	3.4298E-8	45497	3.3383E-8	323262	1.0979E-7	344844	5.4201E-9
46519	3.4302E-8	46519	3.3466E-8	325865	1.0979E-7	353427	4.1419E-9

47540	3.4202E-8	47541	3.3488E-8	328468	6.5242E-8	362010	3.323E-9
48562	3.4284E-8	48562	3.3419E-8	332092	3.9098E-8	370593	2.8115E-9
49583	3.4347E-8	49583	3.3519E-8	335195	2.6501E-8	379176	2.4084E-9
50605	3.4311E-8	50605	3.3533E-8	338298	1.9701E-8	387760	2.1254E-9
51626	3.4272E-8	51627	3.3448E-8	347902	1.0463E-8	396343	1.9294E-9
52648	3.4414E-8	52648	3.3413E-8	355425	7.1641E-9	404926	1.6919E-9
53669	3.4318E-8	53670	3.3499E-8	365030	5.4445E-9	413509	1.6006E-9
54691	3.428E-8	54691	3.3512E-8	373613	4.4361E-9	422092	1.4752E-9
55712	3.4316E-8	55712	3.3472E-8	382196	3.7189E-9	430675	1.3738E-9
56734	3.4308E-8	56734	3.3519E-8	390779	3.199E-9	439258	1.2478E-9
57755	3.4317E-8	57756	3.348E-8	399362	2.8433E-9	447841	1.2144E-9
58777	3.4284E-8	58777	3.3482E-8	407945	2.5626E-9	456424	1.1473E-9
59798	3.4382E-8	59798	3.351E-8	416528	2.3036E-9	465007	1.082E-9
60820	3.4359E-8	60820	3.3476E-8	425111	2.1098E-9	473590	1.0391E-9
61841	3.4257E-8	61841	3.3455E-8	433695	1.956E-9	482174	9.5235E-10
62863	3.436E-8	62863	3.3445E-8	442278	1.827E-9	490757	9.3786E-10
63884	3.4311E-8	63884	3.351E-8	450861	1.7041E-9	499340	4.6969E-8
64906	3.4348E-8	64906	3.3496E-8	459444	1.6071E-9	519608	2.0609E-8
65927	3.4356E-8	65927	3.3388E-8	468027	1.448E-9	522711	1.537E-8
66949	3.437E-8	66949	3.3438E-8	476610	1.4206E-9	532315	7.3926E-9
67970	3.4361E-8	67970	3.3532E-8	485193	1.3213E-9	541920	5.2248E-9
68992	3.4366E-8	68992	3.3421E-8	493776	1.3346E-9	550503	4.0687E-9
70013	3.4425E-8	70013	3.3451E-8	502359	1.2392E-9	559086	3.2723E-9
71035	3.4302E-8	71035	3.3437E-8	513024	1.0312E-7	567669	2.755E-9
72056	3.4272E-8	72056	3.3417E-8	518729	1.085E-7	576252	2.3758E-9
73078	3.4347E-8	73078	3.3464E-8	521332	1.128E-7	584835	2.1023E-9
74099	3.4331E-8	74099	3.3456E-8	523935	7.3516E-8	593418	1.9073E-9
75121	3.4302E-8	75121	3.3449E-8	527560	4.2984E-8	602002	1.7569E-9
76142	3.4375E-8	76142	3.3488E-8	530663	2.866E-8	610585	1.5887E-9
77164	3.435E-8	77164	3.3461E-8	533766	2.103E-8	619168	1.5032E-9
78185	3.4404E-8	78185	3.3556E-8	536869	1.6434E-8	627751	1.3912E-9
79207	3.4382E-8	79207	3.3447E-8	546473	9.5644E-9	636334	1.335E-9
80228	3.4342E-8	80228	3.3398E-8	553997	6.7214E-9	644917	1.2171E-9
81250	3.4337E-8	81250	3.355E-8	563601	5.251E-9	653500	1.161E-9
82271	3.4297E-8	82271	3.3402E-8	572184	4.3343E-9	662083	1.0942E-9
83293	3.4332E-8	83293	3.342E-8	580767	3.6757E-9	670666	1.0453E-9
84314	3.4294E-8	84314	3.3465E-8	589350	3.1969E-9	679249	1.0064E-9
85336	3.4353E-8	85336	3.3446E-8	597933	2.8475E-9	687832	9.9091E-10
86357	3.4337E-8	86357	3.3451E-8	606516	2.5604E-9	696415	7.0278E-9
87379	3.4259E-8	87379	3.3408E-8	615099	2.3515E-9	707080	2.8687E-8
88400	3.4288E-8	88400	3.3412E-8	623683	2.1476E-9	712264	2.8351E-8

89422	3.4374E-8	89422	3.34E-8	632266	1.9621E-9	715367	2.1392E-8
90443	3.4193E-8	90443	3.3388E-8	640849	1.8403E-9	718470	1.5778E-8
91465	3.4296E-8	91465	3.3427E-8	649432	1.7386E-9	728075	7.5477E-9
92486	3.4314E-8	92486	3.3456E-8	658015	1.6441E-9	737679	5.3175E-9
93508	3.4243E-8	93508	3.3351E-8	666598	1.5523E-9	746262	4.1265E-9
94529	3.4243E-8	94529	3.3419E-8	675181	1.4536E-9	754845	3.3415E-9
95551	3.4339E-8	95551	3.3402E-8	683764	1.3806E-9	763428	2.7995E-9
96572	3.4242E-8	96572	3.3422E-8	692347	1.3418E-9	772011	2.4555E-9
97594	3.4241E-8	97594	3.3417E-8	700930	1.2976E-9	780594	2.1381E-9
98615	3.4241E-8	98615	3.3438E-8	711595	1.0829E-7	789178	1.919E-9
99636	3.4253E-8	99637	3.3427E-8	717300	1.1312E-7	797761	1.7728E-9
100658	3.424E-8	100658	3.3402E-8	719903	7.5557E-8	806344	1.645E-9
101679	3.4242E-8	101680	3.3392E-8	723528	4.3919E-8	814927	1.5172E-9
102701	3.4281E-8	102701	3.3363E-8	726631	2.9251E-8	823510	1.432E-9
103722	3.4157E-8	103723	3.3392E-8	729734	2.1408E-8	832093	1.2953E-9
104744	3.4118E-8	104744	3.3388E-8	732837	1.6671E-8	840676	1.2445E-9
105765	3.4223E-8	105766	3.3411E-8	742441	9.7438E-9	849259	1.1898E-9
106787	3.415E-8	106787	3.3354E-8	749964	6.821E-9	857842	1.1327E-9
107808	3.4138E-8	107809	3.3382E-8	759568	5.3621E-9	866425	1.0653E-9
108830	3.541E-8	108830	3.3413E-8	768152	4.3994E-9	875008	1.023E-9
109851	3.297E-8	109852	3.3388E-8	776735	3.7314E-9	883592	9.9223E-10
110873	3.3336E-8	110873	3.3423E-8	785318	3.2507E-9	892175	1.9074E-9
111894	4.1631E-8	111895	3.3335E-8	793901	2.888E-9	902839	3.0029E-8
112916	4.1604E-8	112916	3.3375E-8	802484	2.6545E-9	908023	2.8601E-8
113937	4.7745E-8	113938	3.3449E-8	811067	2.4118E-9	911126	2.2105E-8
114959	5.8236E-8	114959	3.3354E-8	819650	2.2191E-9	914229	1.6219E-8
115980	6.1905E-8	115981	3.342E-8	828233	2.0302E-9	923834	7.6974E-9
117002	6.2753E-8	117002	3.3379E-8	836816	1.8829E-9	933438	5.395E-9
118023	6.3015E-8	118024	3.3376E-8	845399	1.7471E-9	942021	4.1733E-9
119045	6.3199E-8	119045	3.335E-8	853983	1.6669E-9	950604	3.3592E-9
120066	6.2845E-8	120067	3.3445E-8	862566	1.5842E-9	959187	2.8517E-9
121088	5.4566E-8	121088	3.3162E-8	871149	1.5148E-9	967770	2.4517E-9
122109	4.3616E-8	122110	3.1327E-8	879732	1.4377E-9	976354	2.1883E-9
123131	3.8787E-8	123131	3.2499E-8	888315	1.392E-9	984937	1.9529E-9
124152	3.7355E-8	124153	3.3872E-8	896898	1.339E-9	993520	1.7924E-9
125174	3.6975E-8	125174	3.4591E-8	907563	1.0904E-7	1002103	1.8279E-9
126195	3.6796E-8	126196	3.4759E-8	913268	1.1388E-7	1010686	1.7502E-9
127217	3.6594E-8	127217	3.4751E-8	915871	9.2156E-8	1019269	1.6663E-9
128238	3.6579E-8	128239	3.4776E-8	918474	4.8647E-8	1027852	1.5681E-9
129260	3.6524E-8	129260	3.4825E-8	922098	3.1477E-8		
130281	3.6398E-8	130282	3.4802E-8	925201	2.2675E-8		

131303	3.6348E-8	131303	3.4788E-8	928304	1.7501E-8		
132324	3.6291E-8	132325	3.4939E-8	937909	1.0095E-8		
133346	3.6282E-8	133346	3.4816E-8	945432	7.0203E-9		
134367	3.6316E-8	134368	3.5085E-8	955036	5.4988E-9		
135389	3.6243E-8	135389	3.5367E-8	963619	4.4936E-9		
136410	3.6189E-8	136411	3.5411E-8	972203	3.8032E-9		
137432	3.6152E-8	137432	3.5464E-8	980786	3.3339E-9		
138453	3.6159E-8	138454	3.5509E-8	989369	2.988E-9		
139475	3.6042E-8	139475	3.5532E-8	997952	2.6622E-9		
140496	3.6067E-8	140497	3.5542E-8	1006535	2.6305E-9		
141518	3.6054E-8	141518	3.5495E-8	1015118	2.5666E-9		
142539	3.6009E-8	142540	3.5489E-8	1023701	2.4346E-9		
143561	3.6034E-8	143561	3.5458E-8				
144582	3.5995E-8	144583	3.5499E-8				
145604	3.5982E-8	145604	3.5499E-8				
146625	3.5893E-8	146626	3.5464E-8				
147647	3.584E-8	147647	3.5388E-8				
148668	3.5821E-8	148669	3.5427E-8				
149690	3.5798E-8	149690	3.5357E-8				
150711	3.579E-8	150712	3.5378E-8				
151733	3.5764E-8	151733	3.5447E-8				
152754	3.5717E-8	152755	3.5305E-8				
153776	3.5747E-8	153776	3.5299E-8				
154797	3.5626E-8	154798	3.5332E-8				
155819	3.5735E-8	155819	3.5292E-8				
156840	3.5631E-8	156841	3.5196E-8				
157862	3.554E-8	157862	3.5246E-8				
158883	3.564E-8	158883	3.5179E-8				
159905	3.5533E-8	159905	3.5122E-8				
160926	3.5524E-8	160927	3.5144E-8				
161948	3.5472E-8	161948	3.5135E-8				
162969	3.554E-8	162970	3.5083E-8				
163991	3.5405E-8	163991	3.509E-8				
165012	3.5449E-8	165013	3.5032E-8				
166033	3.5409E-8	166034	3.497E-8				
167055	3.5425E-8	167056	3.4976E-8				
168076	3.5339E-8	168077	3.4969E-8				
169098	3.5286E-8	169099	3.4888E-8				
170119	3.5343E-8	170120	3.4868E-8				
171141	3.5281E-8	171142	3.4943E-8				
172162	3.5216E-8	172163	3.4821E-8				

173184	3.527E-8	173185	3.4704E-8
174205	3.5192E-8	174206	3.4855E-8
175227	3.5204E-8	175228	3.4807E-8
176248	3.5187E-8	176249	3.4806E-8
177270	3.5226E-8	177270	3.4714E-8
178291	3.514E-8	178292	3.4728E-8
179313	3.5086E-8	179313	3.4665E-8
180334	3.5119E-8	180335	3.4632E-8
181356	3.506E-8	181356	3.468E-8
182377	3.4984E-8	182378	3.47E-8
183399	3.5068E-8	183399	3.4611E-8
184420	3.5085E-8	184421	3.4648E-8
185442	3.4998E-8	185442	3.4538E-8
186463	3.5016E-8	186464	3.4546E-8
187485	3.4899E-8	187485	3.4473E-8
188506	3.4961E-8	188507	3.4593E-8
189528	3.4966E-8	189528	3.4483E-8
190549	3.4884E-8	190550	3.4425E-8
191571	3.4899E-8	191571	3.4571E-8
192592	3.4885E-8	192593	3.4396E-8
193614	3.4945E-8	193614	3.439E-8
194635	3.4881E-8	194636	3.4388E-8
195657	3.4814E-8	195657	3.4366E-8
196678	3.4895E-8	196679	3.4329E-8
197700	3.4746E-8	197700	3.431E-8
198721	3.4786E-8	198722	3.4315E-8
199743	3.4805E-8	199743	3.4239E-8
200764	3.4788E-8	200765	3.4284E-8
201786	3.4757E-8	201787	3.4163E-8
202807	3.4763E-8	202808	3.4292E-8
203829	3.4722E-8	203830	3.42E-8
204850	3.4683E-8	204851	3.4177E-8
205872	3.4776E-8	205873	3.4197E-8
206893	3.4682E-8	206894	3.415E-8
207915	3.471E-8	207916	3.4193E-8
208936	3.4689E-8	208937	3.4161E-8
209958	3.4702E-8	209959	3.4124E-8
210979	3.4694E-8	210980	3.4083E-8
212001	3.4632E-8	212001	3.4091E-8
213022	3.4666E-8	213023	3.4111E-8
214044	3.4556E-8	214044	3.411E-8

215065	3.4574E-8	215066	3.4027E-8
216087	3.4688E-8	216088	3.4076E-8
217108	3.4558E-8	217109	3.4058E-8
218130	3.4541E-8	218130	3.3976E-8
219151	3.4536E-8	219152	3.4117E-8
220173	3.4556E-8	220173	3.3969E-8
221194	3.4499E-8	221195	3.3917E-8
222216	3.4584E-8	222217	3.3997E-8
223237	3.4524E-8	223238	3.3935E-8
224259	3.4525E-8	224260	3.3892E-8
225280	3.4521E-8	225281	3.3974E-8
226302	3.4515E-8	226303	3.3946E-8
227323	3.4476E-8	227324	3.3963E-8
228345	3.447E-8	228346	3.3947E-8
229366	3.4546E-8	229367	3.3991E-8
230388	3.4476E-8	230389	3.395E-8
231409	3.4458E-8	231410	3.3863E-8
232431	3.4481E-8	232432	3.3935E-8
233452	3.4446E-8	233453	3.3839E-8
234474	3.4353E-8	234475	3.3895E-8
235495	3.4443E-8	235496	3.3861E-8
236517	3.4409E-8	236517	3.3889E-8
237538	3.444E-8	237539	3.3879E-8
238560	3.4351E-8	238560	3.3842E-8
239581	3.4415E-8	239582	3.3866E-8
240603	3.4364E-8	240603	3.3823E-8
241624	3.4285E-8	241625	3.3793E-8
242646	3.4419E-8	242646	3.3884E-8
243667	3.4253E-8	243668	3.3831E-8
244689	3.4322E-8	244689	3.3773E-8
245710	3.4302E-8	245711	3.3853E-8
246732	3.4319E-8	246732	3.3788E-8
247753	3.4304E-8	247754	3.3754E-8
248775	3.4283E-8	248776	3.3787E-8
249796	3.4326E-8	249797	3.3804E-8
250818	3.4243E-8	250819	3.381E-8
251839	3.4208E-8	251840	3.3693E-8
252861	3.43E-8	252862	3.3763E-8
253882	3.4223E-8	253883	3.3726E-8
254904	3.4229E-8	254905	3.371E-8
255925	3.4183E-8	255926	3.3716E-8

256947	3.4219E-8	256948	3.3796E-8
257968	3.4224E-8	257969	3.3671E-8
258990	3.4136E-8	258990	3.377E-8
260011	3.4219E-8	260012	3.3695E-8
261032	3.4236E-8	261033	3.3705E-8
262054	3.4205E-8	262055	3.3683E-8
263076	3.4156E-8	263077	3.3776E-8
264097	3.4188E-8	264098	3.3668E-8
265119	3.4221E-8	265120	3.3705E-8
266140	3.4214E-8	266141	3.3668E-8
267162	3.419E-8	267162	3.3658E-8
268183	3.4123E-8	268184	3.3693E-8
269205	3.4116E-8	269206	3.3651E-8
270226	3.416E-8	270227	3.3639E-8
271248	3.412E-8	271249	3.3667E-8
272269	3.4181E-8	272270	3.3674E-8
273291	3.417E-8	273291	3.366E-8
274312	3.4104E-8	274313	3.3583E-8
275334	3.4085E-8	275334	3.3672E-8
276355	3.4093E-8	276356	3.3599E-8
277376	3.4077E-8	277378	3.3611E-8
278398	3.4085E-8	278399	3.3624E-8
279419	3.403E-8	279421	3.3622E-8
280441	3.4032E-8	280442	3.3639E-8
281462	3.4139E-8	281464	3.3564E-8
282484	3.3995E-8	282485	3.3553E-8
283505	3.412E-8	283507	3.3676E-8
284527	3.4062E-8	284528	3.3511E-8
285548	3.4014E-8	285550	3.3562E-8
286570	3.4015E-8	286571	3.3585E-8
287591	3.4095E-8	287593	3.3582E-8
288613	3.3948E-8	288614	3.3504E-8
289634	3.3983E-8	289636	3.3648E-8
290656	3.4077E-8	290657	3.3525E-8
291677	3.3952E-8	291679	3.3525E-8
292699	3.3993E-8	292700	3.355E-8
293720	3.3997E-8	293721	3.3534E-8
294742	3.4019E-8	294743	3.3478E-8
295763	3.3995E-8	295764	3.3613E-8
296785	3.4028E-8	296786	3.3607E-8
297806	3.405E-8	297807	3.3478E-8

298828	3.3944E-8	298829	3.3533E-8
299850	3.3961E-8	299850	3.3597E-8
300871	3.3995E-8	300872	3.3617E-8
301893	3.3969E-8	301893	3.3499E-8
302914	3.3917E-8	302915	3.3527E-8
303936	3.3952E-8	303937	3.3529E-8
304957	3.5235E-8	304958	3.351E-8
305978	3.2498E-8	305980	3.3578E-8
307000	3.3361E-8	307001	3.3505E-8
308022	4.1321E-8	308023	3.3485E-8
309043	4.102E-8	309044	3.3492E-8
310065	4.7938E-8	310066	3.3507E-8
311086	5.8103E-8	311087	3.3516E-8
312108	6.1303E-8	312109	3.3448E-8
313129	6.2081E-8	313130	3.3495E-8
314151	6.2425E-8	314152	3.3474E-8
315172	6.2498E-8	315173	3.3482E-8
316194	6.2116E-8	316195	3.3672E-8
317215	5.3284E-8	317216	3.3044E-8
318237	4.2573E-8	318238	3.134E-8
319258	3.8094E-8	319259	3.2524E-8
320280	3.683E-8	320281	3.3791E-8
321301	3.652E-8	321302	3.4522E-8
322323	3.6224E-8	322324	3.4687E-8
323345	3.6183E-8	323345	3.4782E-8
324366	3.6045E-8	324367	3.4622E-8
325388	3.6026E-8	325388	3.463E-8
326409	3.6018E-8	326410	3.485E-8
327431	3.5847E-8	327431	3.4729E-8
328452	3.5925E-8	328453	3.474E-8
329474	3.5858E-8	329474	3.4851E-8
330495	3.5794E-8	330496	3.5057E-8
331517	3.5817E-8	331517	3.5329E-8
332538	3.5786E-8	332539	3.5447E-8
333560	3.571E-8	333560	3.5409E-8
334581	3.5661E-8	334582	3.5462E-8
335603	3.5663E-8	335603	3.5439E-8
336624	3.5575E-8	336625	3.5419E-8
337646	3.5536E-8	337646	3.5436E-8
338667	3.5618E-8	338668	3.5403E-8
339689	3.5569E-8	339690	3.5412E-8

340710	3.5452E-8	340711	3.5408E-8
341732	3.544E-8	341733	3.5464E-8
342753	3.552E-8	342754	3.5398E-8
343775	3.5399E-8	343776	3.5327E-8
344796	3.5345E-8	344797	3.5387E-8
345818	3.5418E-8	345819	3.5325E-8
346839	3.5372E-8	346840	3.5334E-8
347861	3.5248E-8	347862	3.5329E-8
348882	3.5278E-8	348883	3.5317E-8
349904	3.5319E-8	349905	3.5218E-8
350926	3.5222E-8	350926	3.5311E-8
351947	3.5282E-8	351948	3.5218E-8
352969	3.5266E-8	352969	3.5246E-8
353990	3.5167E-8	353991	3.5217E-8
355012	3.5176E-8	355012	3.52E-8
356033	3.5198E-8	356034	3.5219E-8
357055	3.5132E-8	357055	3.5099E-8
358076	3.5031E-8	358077	3.5019E-8
359098	3.5069E-8	359098	3.5176E-8
360119	3.5027E-8	360120	3.5087E-8
361141	3.496E-8	361141	3.5055E-8
362162	3.4944E-8	362163	3.5107E-8
363184	3.4999E-8	363184	3.4954E-8
364205	3.4905E-8	364206	3.4922E-8
365227	3.4882E-8	365227	3.5057E-8
366248	3.4884E-8	366249	3.4906E-8
367270	3.492E-8	367270	3.4915E-8
368291	3.4884E-8	368292	3.4845E-8
369313	3.4831E-8	369313	3.4884E-8
370334	3.4854E-8	370335	3.4854E-8
371356	3.4818E-8	371356	3.4769E-8
372377	3.4731E-8	372378	3.4709E-8
373399	3.4723E-8	373399	3.4787E-8
374420	3.4713E-8	374421	3.4767E-8
375442	3.4724E-8	375442	3.4678E-8
376463	3.4735E-8	376464	3.4807E-8
377485	3.479E-8	377485	3.4655E-8
378506	3.4687E-8	378507	3.454E-8
379528	3.4579E-8	379528	3.4639E-8
380549	3.4562E-8	380550	3.4628E-8
381571	3.4675E-8	381571	3.4591E-8

382592	3.455E-8	382593	3.4599E-8
383614	3.4545E-8	383614	3.4493E-8
384635	3.4609E-8	384636	3.4538E-8
385657	3.4493E-8	385657	3.4546E-8
386678	3.4572E-8	386679	3.4446E-8
387700	3.4564E-8	387700	3.4476E-8
388721	3.462E-8	388722	3.4456E-8
389743	3.4478E-8	389743	3.4369E-8
390764	3.4496E-8	390765	3.4377E-8
391786	3.4529E-8	391786	3.4396E-8
392807	3.4399E-8	392808	3.4353E-8
393829	3.4449E-8	393829	3.4314E-8
394850	3.4435E-8	394851	3.4316E-8
395872	3.4452E-8	395872	3.4263E-8
396893	3.4424E-8	396894	3.4295E-8
397915	3.4475E-8	397915	3.4283E-8
398936	3.4437E-8	398937	3.4179E-8
399958	3.44E-8	399958	3.4206E-8
400979	3.4386E-8	400980	3.421E-8
402001	3.4327E-8	402001	3.4219E-8
403022	3.4418E-8	403023	3.4149E-8
404044	3.4328E-8	404044	3.4191E-8
405065	3.4365E-8	405066	3.4117E-8
406087	3.444E-8	406087	3.3983E-8
407108	3.4373E-8	407109	3.4201E-8
408130	3.4321E-8	408130	3.413E-8
409151	3.43E-8	409152	3.4097E-8
410173	3.4304E-8	410173	3.41E-8
411195	3.4261E-8	411195	3.4101E-8
412216	3.4255E-8	412216	3.4024E-8
413238	3.4324E-8	413238	3.4036E-8
414259	3.4232E-8	414259	3.4074E-8
415281	3.4275E-8	415281	3.4021E-8
416302	3.4231E-8	416302	3.4019E-8
417324	3.4292E-8	417324	3.4081E-8
418345	3.4194E-8	418345	3.4036E-8
419367	3.4159E-8	419367	3.3945E-8
420388	3.4284E-8	420388	3.4085E-8
421410	3.4254E-8	421410	3.4007E-8
422431	3.4213E-8	422431	3.3957E-8
423453	3.4196E-8	423453	3.405E-8

424474	3.4232E-8	424474	3.3909E-8
425496	3.4165E-8	425496	3.401E-8
426517	3.4172E-8	426517	3.398E-8
427539	3.4212E-8	427539	3.3984E-8
428560	3.4139E-8	428560	3.3922E-8
429582	3.413E-8	429582	3.3972E-8
430603	3.4151E-8	430603	3.3956E-8
431625	3.4079E-8	431625	3.3907E-8
432646	3.4108E-8	432646	3.3942E-8
433668	3.4144E-8	433668	3.3928E-8
434689	3.4135E-8	434689	3.3934E-8
435711	3.4023E-8	435711	3.39E-8
436732	3.4089E-8	436732	3.3926E-8
437754	3.407E-8	437754	3.3801E-8
438775	3.407E-8	438775	3.391E-8
439797	3.4052E-8	439797	3.3876E-8
440819	3.4021E-8	440818	3.3851E-8
441840	3.4016E-8	441840	3.3886E-8
442862	3.4057E-8	442861	3.3781E-8
443883	3.4075E-8	443883	3.3867E-8
444905	3.4078E-8	444904	3.3798E-8
445926	3.4081E-8	445926	3.3825E-8
446948	3.4015E-8	446947	3.3892E-8
447969	3.4045E-8	447969	3.3772E-8
448991	3.399E-8	448990	3.3812E-8
450012	3.3972E-8	450012	3.3883E-8
451034	3.4025E-8	451033	3.3771E-8
452055	3.3931E-8	452055	3.3711E-8
453077	3.4009E-8	453076	3.3825E-8
454098	3.4005E-8	454098	3.3727E-8
455120	3.3931E-8	455119	3.3698E-8
456141	3.4053E-8	456141	3.3847E-8
457163	3.3892E-8	457162	3.3747E-8
458184	3.3927E-8	458184	3.3679E-8
459205	3.3985E-8	459205	3.3832E-8
460227	3.3921E-8	460227	3.3718E-8
461249	3.3919E-8	461248	3.3676E-8
462270	3.4001E-8	462270	3.3798E-8
463292	3.3905E-8	463291	3.3761E-8
464313	3.39E-8	464313	3.3794E-8
465335	3.3864E-8	465334	3.3694E-8

466356	3.3882E-8	466356	3.3716E-8
467378	3.392E-8	467377	3.3704E-8
468399	3.3904E-8	468399	3.3759E-8
469421	3.3885E-8	469420	3.3656E-8
470442	3.3832E-8	470442	3.3647E-8
471464	3.3842E-8	471463	3.3656E-8
472485	3.384E-8	472485	3.3646E-8
473507	3.3896E-8	473506	3.3678E-8
474528	3.3884E-8	474528	3.3716E-8
475550	3.3885E-8	475549	3.3675E-8
476571	3.3847E-8	476571	3.3651E-8
477593	3.3849E-8	477592	3.3612E-8
478614	3.3825E-8	478613	3.3679E-8
479636	3.3804E-8	479635	3.3586E-8
480657	3.3857E-8	480657	3.3515E-8
481679	3.3836E-8	481678	3.365E-8
482700	3.3806E-8	482700	3.3599E-8
483722	3.3884E-8	483721	3.3601E-8
484743	3.3786E-8	484743	3.3659E-8
485765	3.3768E-8	485764	3.3612E-8
486786	3.3905E-8	486786	3.3637E-8
487808	3.3751E-8	487807	3.3671E-8
488829	3.3803E-8	488829	3.3667E-8
489851	3.3809E-8	489850	3.3599E-8
490872	3.3764E-8	490872	3.3609E-8
491894	3.38E-8	491893	3.3566E-8
492915	3.3815E-8	492915	3.3549E-8
493937	3.3751E-8	493936	3.3595E-8
494958	3.3772E-8	494958	3.3621E-8
495980	3.3754E-8	495979	3.3577E-8
497001	3.3787E-8	497000	3.3574E-8
498023	3.3702E-8	498022	3.354E-8
499044	3.3681E-8	499043	3.3561E-8
500066	3.3763E-8	500065	3.3509E-8
501087	3.5063E-8	501086	3.3501E-8
502109	3.219E-8	502108	3.3585E-8
503130	3.3026E-8	503129	3.354E-8
504152	4.0732E-8	504151	3.3535E-8
505173	4.0606E-8	505172	3.3553E-8
506195	4.8056E-8	506194	3.3529E-8
507216	5.7775E-8	507215	3.3482E-8

508238	6.0799E-8	508237	3.3499E-8
509259	6.1622E-8	509258	3.3548E-8
510281	6.186E-8	510280	3.3513E-8
511302	6.1966E-8	511301	3.3431E-8
512324	6.1574E-8	512323	3.3855E-8
513345	5.267E-8	513345	3.2853E-8
514367	4.2051E-8	514366	3.1226E-8
515388	3.7789E-8	515388	3.2535E-8
516410	3.6582E-8	516409	3.384E-8
517431	3.6116E-8	517431	3.4518E-8
518453	3.5956E-8	518452	3.4667E-8
519474	3.581E-8	519474	3.4702E-8
520496	3.5759E-8	520495	3.4627E-8
521517	3.5775E-8	521517	3.4749E-8
522539	3.563E-8	522538	3.4727E-8
523560	3.5546E-8	523560	3.4739E-8
524582	3.5536E-8	524581	3.471E-8
525603	3.5533E-8	525603	3.4773E-8
526625	3.5519E-8	526624	3.4991E-8
527647	3.5485E-8	527646	3.5265E-8
528668	3.5427E-8	528667	3.5343E-8
529690	3.5382E-8	529689	3.5398E-8
530711	3.5344E-8	530710	3.5351E-8
531733	3.5361E-8	531732	3.5502E-8
532754	3.532E-8	532753	3.5439E-8
533776	3.5233E-8	533775	3.5414E-8
534797	3.5358E-8	534796	3.544E-8
535819	3.5233E-8	535818	3.5387E-8
536840	3.513E-8	536839	3.5343E-8
537862	3.5275E-8	537861	3.5386E-8
538883	3.5163E-8	538882	3.5425E-8
539904	3.5146E-8	539904	3.5329E-8
540926	3.517E-8	540925	3.5274E-8
541947	3.5074E-8	541947	3.5272E-8
542969	3.5044E-8	542968	3.5263E-8
543990	3.5112E-8	543990	3.5312E-8
545012	3.5081E-8	545011	3.5257E-8
546033	3.4944E-8	546033	3.5304E-8
547055	3.5015E-8	547054	3.5166E-8
548076	3.5014E-8	548076	3.5163E-8
549098	3.4915E-8	549097	3.5162E-8

550119	3.4911E-8	550119	3.517E-8
551141	3.4859E-8	551140	3.5159E-8
552162	3.4821E-8	552162	3.5104E-8
553184	3.4835E-8	553183	3.5093E-8
554205	3.4805E-8	554205	3.5048E-8
555227	3.4856E-8	555226	3.5058E-8
556248	3.4764E-8	556248	3.5085E-8
557270	3.4767E-8	557269	3.5028E-8
558291	3.4809E-8	558291	3.5015E-8
559313	3.473E-8	559312	3.4953E-8
560334	3.463E-8	560334	3.4894E-8
561356	3.4636E-8	561355	3.494E-8
562377	3.466E-8	562377	3.4913E-8
563399	3.4676E-8	563398	3.4934E-8
564420	3.4627E-8	564420	3.4848E-8
565442	3.4612E-8	565441	3.4868E-8
566463	3.4525E-8	566463	3.4757E-8
567485	3.4513E-8	567484	3.4799E-8
568506	3.4466E-8	568506	3.4779E-8
569528	3.4569E-8	569527	3.4719E-8
570549	3.4472E-8	570549	3.4718E-8
571571	3.4439E-8	571570	3.4657E-8
572592	3.4487E-8	572592	3.472E-8
573614	3.4451E-8	573613	3.4704E-8
574635	3.4414E-8	574635	3.4629E-8
575657	3.4391E-8	575656	3.4538E-8
576678	3.4404E-8	576678	3.456E-8
577700	3.4409E-8	577699	3.4507E-8
578721	3.4359E-8	578721	3.4573E-8
579743	3.4356E-8	579742	3.451E-8
580764	3.4322E-8	580764	3.452E-8
581786	3.4346E-8	581785	3.4504E-8
582807	3.4275E-8	582807	3.4511E-8
583829	3.4346E-8	583828	3.4409E-8
584850	3.4257E-8	584850	3.4367E-8
585872	3.4266E-8	585871	3.4396E-8
586893	3.4304E-8	586893	3.4407E-8
587915	3.4214E-8	587914	3.4332E-8
588936	3.4228E-8	588936	3.4345E-8
589958	3.4171E-8	589957	3.4323E-8
590979	3.4257E-8	590979	3.4243E-8

592001	3.4185E-8	592000	3.4235E-8
593022	3.4122E-8	593022	3.4291E-8
594044	3.4195E-8	594043	3.4287E-8
595065	3.4187E-8	595065	3.4224E-8
596087	3.4116E-8	596086	3.4257E-8
597108	3.4146E-8	597108	3.4257E-8
598130	3.4186E-8	598129	3.4163E-8
599151	3.4146E-8	599151	3.4241E-8
600173	3.413E-8	600172	3.4211E-8
601194	3.4123E-8	601194	3.414E-8
602216	3.4138E-8	602215	3.419E-8
603237	3.4064E-8	603237	3.4118E-8
604259	3.4058E-8	604258	3.4091E-8
605280	3.4099E-8	605280	3.4211E-8
606302	3.4043E-8	606301	3.4161E-8
607323	3.4072E-8	607323	3.4107E-8
608345	3.3969E-8	608344	3.4112E-8
609366	3.4042E-8	609366	3.4087E-8
610388	3.4103E-8	610387	3.4049E-8
611409	3.4052E-8	611409	3.4103E-8
612431	3.4018E-8	612430	3.407E-8
613452	3.4106E-8	613452	3.4017E-8
614474	3.398E-8	614473	3.4092E-8
615495	3.397E-8	615495	3.4031E-8
616517	3.3993E-8	616516	3.3985E-8
617538	3.3978E-8	617538	3.4076E-8
618560	3.3941E-8	618559	3.3993E-8
619581	3.397E-8	619581	3.3999E-8
620603	3.3942E-8	620602	3.3931E-8
621624	3.3946E-8	621624	3.3977E-8
622646	3.3976E-8	622645	3.3953E-8
623667	3.3884E-8	623667	3.3954E-8
624689	3.3878E-8	624688	3.382E-8
625710	3.3909E-8	625710	3.3938E-8
626732	3.3958E-8	626731	3.3941E-8
627753	3.3916E-8	627753	3.3953E-8
628775	3.3862E-8	628774	3.3968E-8
629796	3.3921E-8	629796	3.3888E-8
630817	3.3818E-8	630817	3.3873E-8
631839	3.3792E-8	631839	3.3923E-8
632860	3.3868E-8	632860	3.388E-8

633882	3.3889E-8	633882	3.388E-8
634903	3.3857E-8	634903	3.3928E-8
635925	3.3813E-8	635925	3.3931E-8
636946	3.3814E-8	636946	3.3781E-8
637968	3.3804E-8	637968	3.3898E-8
638989	3.3808E-8	638989	3.3841E-8
640011	3.3843E-8	640011	3.3874E-8
641032	3.3856E-8	641032	3.3892E-8
642054	3.3767E-8	642054	3.3832E-8
643075	3.3755E-8	643075	3.3834E-8
644097	3.3843E-8	644097	3.3844E-8
645118	3.3816E-8	645118	3.3757E-8
646140	3.3761E-8	646140	3.3809E-8
647161	3.3847E-8	647161	3.3769E-8
648183	3.3768E-8	648183	3.3793E-8
649204	3.3786E-8	649204	3.3754E-8
650226	3.3785E-8	650226	3.3836E-8
651247	3.381E-8	651247	3.3826E-8
652269	3.3795E-8	652269	3.3732E-8
653290	3.3805E-8	653290	3.3773E-8
654312	3.3774E-8	654312	3.3749E-8
655333	3.3743E-8	655333	3.3716E-8
656355	3.3717E-8	656355	3.378E-8
657376	3.3698E-8	657376	3.3735E-8
658398	3.3743E-8	658398	3.3734E-8
659419	3.3717E-8	659419	3.3798E-8
660441	3.372E-8	660441	3.3763E-8
661462	3.3742E-8	661462	3.3724E-8
662484	3.3716E-8	662484	3.3826E-8
663505	3.3685E-8	663505	3.3695E-8
664527	3.375E-8	664527	3.3688E-8
665548	3.372E-8	665548	3.3767E-8
666570	3.3679E-8	666570	3.371E-8
667591	3.3656E-8	667591	3.3699E-8
668613	3.3696E-8	668613	3.3828E-8
669634	3.3601E-8	669634	3.3761E-8
670656	3.3664E-8	670656	3.3691E-8
671677	3.3602E-8	671677	3.3777E-8
672699	3.3635E-8	672699	3.3724E-8
673720	3.367E-8	673720	3.3694E-8
674742	3.3644E-8	674742	3.3709E-8

675763	3.3532E-8	675763	3.3759E-8
676785	3.3635E-8	676785	3.3722E-8
677806	3.3636E-8	677806	3.3692E-8
678828	3.358E-8	678828	3.3653E-8
679849	3.3578E-8	679849	3.3609E-8
680871	3.3611E-8	680871	3.3667E-8
681892	3.3559E-8	681892	3.3712E-8
682914	3.3603E-8	682914	3.3666E-8
683935	3.3635E-8	683935	3.3656E-8
684957	3.3624E-8	684957	3.3635E-8
685978	3.3604E-8	685978	3.3611E-8
687000	3.3606E-8	687000	3.3593E-8
688021	3.3583E-8	688021	3.3642E-8
689043	3.364E-8	689043	3.3662E-8
690064	3.3596E-8	690064	3.3589E-8
691086	3.3601E-8	691086	3.3681E-8
692107	3.353E-8	692107	3.357E-8
693129	3.3542E-8	693129	3.3583E-8
694150	3.3532E-8	694150	3.3651E-8
695172	3.3522E-8	695172	3.3565E-8
696193	3.3529E-8	696193	3.3648E-8
697215	3.5027E-8	697215	3.3642E-8
698236	3.1945E-8	698236	3.356E-8
699258	3.3106E-8	699258	3.3534E-8
700279	4.0722E-8	700279	3.3646E-8
701301	4.0332E-8	701301	3.3538E-8
702322	4.7963E-8	702322	3.3574E-8
703344	5.7498E-8	703343	3.3595E-8
704365	6.0441E-8	704365	3.3548E-8
705387	6.1193E-8	705387	3.3497E-8
706408	6.1403E-8	706408	3.3575E-8
707430	6.1599E-8	707430	3.3546E-8
708451	6.1183E-8	708451	3.3885E-8
709473	5.2223E-8	709472	3.2906E-8
710494	4.1717E-8	710494	3.1284E-8
711516	3.7409E-8	711516	3.2576E-8
712537	3.6251E-8	712537	3.3913E-8
713559	3.5931E-8	713559	3.4481E-8
714580	3.56E-8	714580	3.4677E-8
715602	3.5655E-8	715602	3.4703E-8
716623	3.5423E-8	716623	3.4651E-8

717645	3.535E-8	717645	3.4635E-8
718666	3.538E-8	718667	3.4722E-8
719688	3.5302E-8	719688	3.4763E-8
720709	3.5303E-8	720710	3.4796E-8
721731	3.5169E-8	721731	3.4755E-8
722752	3.5232E-8	722753	3.5005E-8
723774	3.5181E-8	723774	3.5296E-8
724795	3.5125E-8	724796	3.5319E-8
725817	3.5071E-8	725817	3.5378E-8
726838	3.5101E-8	726839	3.5492E-8
727860	3.5021E-8	727860	3.5405E-8
728881	3.5047E-8	728882	3.5487E-8
729903	3.4989E-8	729903	3.5427E-8
730924	3.498E-8	730925	3.5413E-8
731945	3.5007E-8	731946	3.5298E-8
732967	3.4911E-8	732968	3.5415E-8
733989	3.4845E-8	733989	3.5497E-8
735010	3.4942E-8	735010	3.5324E-8
736032	3.4902E-8	736032	3.5314E-8
737053	3.4865E-8	737053	3.5395E-8
738075	3.4784E-8	738075	3.5257E-8
739096	3.4896E-8	739096	3.5288E-8
740117	3.485E-8	740118	3.5227E-8
741139	3.4728E-8	741139	3.5306E-8
742160	3.4655E-8	742161	3.5217E-8
743182	3.4767E-8	743182	3.519E-8
744203	3.464E-8	744204	3.5198E-8
745225	3.4573E-8	745225	3.5248E-8
746246	3.4712E-8	746247	3.5153E-8
747268	3.4611E-8	747269	3.5089E-8
748289	3.4582E-8	748290	3.5137E-8
749311	3.4616E-8	749312	3.5107E-8
750332	3.4562E-8	750333	3.5033E-8
751354	3.4493E-8	751355	3.5058E-8
752375	3.446E-8	752376	3.5047E-8
753397	3.4581E-8	753398	3.49E-8
754418	3.4432E-8	754419	3.5005E-8
755440	3.4462E-8	755441	3.4943E-8
756461	3.4488E-8	756462	3.492E-8
757483	3.4401E-8	757484	3.4927E-8
758504	3.4368E-8	758505	3.4886E-8

759526	3.4376E-8	759527	3.4861E-8
760547	3.4353E-8	760548	3.4872E-8
761569	3.4355E-8	761570	3.4836E-8
762591	3.4339E-8	762591	3.4789E-8
763612	3.429E-8	763612	3.4765E-8
764634	3.4216E-8	764634	3.4802E-8
765655	3.4304E-8	765655	3.4717E-8
766677	3.4252E-8	766677	3.4718E-8
767698	3.4336E-8	767698	3.4615E-8
768720	3.4183E-8	768720	3.4657E-8
769741	3.4221E-8	769741	3.4627E-8
770763	3.422E-8	770763	3.4569E-8
771784	3.4161E-8	771784	3.4621E-8
772806	3.4212E-8	772806	3.4564E-8
773827	3.4065E-8	773827	3.4591E-8
774849	3.4095E-8	774849	3.4558E-8
775870	3.4109E-8	775870	3.4549E-8
776892	3.4113E-8	776892	3.4483E-8
777913	3.4177E-8	777913	3.4428E-8
778934	3.4128E-8	778935	3.446E-8
779956	3.4098E-8	779957	3.4502E-8
780977	3.4113E-8	780978	3.4262E-8
781999	3.4066E-8	782000	3.4405E-8
783021	3.3994E-8	783021	3.4441E-8
784042	3.4021E-8	784043	3.4315E-8
785064	3.406E-8	785064	3.43E-8
786085	3.4E-8	786086	3.4343E-8
787107	3.3972E-8	787107	3.428E-8
788128	3.3944E-8	788128	3.428E-8
789150	3.395E-8	789150	3.4211E-8
790171	3.3949E-8	790171	3.4218E-8
791193	3.3904E-8	791193	3.4213E-8
792214	3.401E-8	792214	3.4183E-8
793236	3.3868E-8	793236	3.4277E-8
794257	3.3868E-8	794257	3.4159E-8
795279	3.3973E-8	795279	3.4198E-8
796300	3.3876E-8	796300	3.4161E-8
797322	3.3876E-8	797322	3.4121E-8
798343	3.3826E-8	798343	3.41E-8
799365	3.3946E-8	799365	3.4119E-8
800386	3.3883E-8	800386	3.4133E-8

801408	3.3877E-8	801408	3.4085E-8
802429	3.3887E-8	802430	3.4118E-8
803451	3.389E-8	803451	3.4125E-8
804472	3.3843E-8	804472	3.4033E-8
805494	3.3822E-8	805494	3.4134E-8
806515	3.385E-8	806516	3.4093E-8
807537	3.3849E-8	807537	3.4081E-8
808558	3.3795E-8	808559	3.4091E-8
809580	3.3886E-8	809580	3.4085E-8
810601	3.3804E-8	810602	3.405E-8
811623	3.3814E-8	811623	3.4058E-8
812644	3.3819E-8	812645	3.4079E-8
813666	3.378E-8	813666	3.4018E-8
814687	3.3725E-8	814688	3.3979E-8
815709	3.3745E-8	815709	3.4005E-8
816730	3.3816E-8	816731	3.3916E-8
817752	3.3718E-8	817752	3.3949E-8
818773	3.3709E-8	818774	3.3945E-8
819795	3.3785E-8	819795	3.3916E-8
820816	3.3743E-8	820817	3.3917E-8
821838	3.3683E-8	821838	3.3934E-8
822859	3.3647E-8	822860	3.3933E-8
823881	3.3696E-8	823881	3.3945E-8
824902	3.3687E-8	824903	3.3954E-8
825924	3.3683E-8	825924	3.3894E-8
826945	3.3814E-8	826946	3.3916E-8
827967	3.3716E-8	827967	3.3915E-8
828988	3.3636E-8	828989	3.3883E-8
830010	3.3675E-8	830010	3.3904E-8
831031	3.3606E-8	831032	3.3889E-8
832053	3.3632E-8	832053	3.3866E-8
833074	3.3687E-8	833075	3.3842E-8
834095	3.3691E-8	834096	3.3913E-8
835117	3.3675E-8	835118	3.3882E-8
836138	3.3644E-8	836139	3.3822E-8
837160	3.3662E-8	837161	3.3843E-8
838181	3.3646E-8	838182	3.379E-8
839203	3.3614E-8	839204	3.3802E-8
840224	3.3657E-8	840225	3.3827E-8
841246	3.366E-8	841247	3.3815E-8
842267	3.3544E-8	842268	3.3792E-8

843289	3.3635E-8	843290	3.3823E-8
844310	3.3614E-8	844311	3.38E-8
845332	3.3642E-8	845333	3.3765E-8
846353	3.3605E-8	846354	3.3839E-8
847375	3.3666E-8	847376	3.3779E-8
848396	3.3613E-8	848397	3.3789E-8
849418	3.3608E-8	849419	3.3749E-8
850439	3.3601E-8	850440	3.3787E-8
851461	3.3579E-8	851462	3.3729E-8
852482	3.3594E-8	852483	3.3761E-8
853504	3.3572E-8	853505	3.382E-8
854525	3.3482E-8	854526	3.3734E-8
855547	3.3592E-8	855548	3.3732E-8
856568	3.3593E-8	856569	3.3822E-8
857590	3.3605E-8	857591	3.3769E-8
858611	3.3494E-8	858612	3.3691E-8
859633	3.3609E-8	859634	3.3761E-8
860654	3.353E-8	860655	3.3724E-8
861676	3.3513E-8	861677	3.372E-8
862697	3.3611E-8	862698	3.3777E-8
863719	3.356E-8	863720	3.3676E-8
864740	3.3533E-8	864741	3.3681E-8
865762	3.3552E-8	865763	3.3753E-8
866783	3.3565E-8	866784	3.3724E-8
867805	3.3503E-8	867806	3.3679E-8
868826	3.3495E-8	868827	3.3754E-8
869848	3.3535E-8	869849	3.3759E-8
870869	3.3516E-8	870870	3.3703E-8
871891	3.356E-8	871892	3.3693E-8
872912	3.3466E-8	872913	3.3679E-8
873934	3.348E-8	873935	3.37E-8
874955	3.3486E-8	874956	3.3685E-8
875977	3.3447E-8	875978	3.3687E-8
876998	3.3458E-8	876999	3.3612E-8
878020	3.3433E-8	878021	3.3661E-8
879041	3.3449E-8	879042	3.3716E-8
880063	3.3444E-8	880064	3.3672E-8
881084	3.3495E-8	881085	3.3618E-8
882106	3.3463E-8	882107	3.3677E-8
883127	3.3462E-8	883128	3.3582E-8
884149	3.3541E-8	884150	3.3629E-8

885170	3.3467E-8	885171	3.3633E-8
886192	3.3423E-8	886193	3.3658E-8
887213	3.3454E-8	887214	3.361E-8
888235	3.3486E-8	888236	3.3663E-8
889256	3.3431E-8	889257	3.3619E-8
890278	3.3397E-8	890279	3.3655E-8
891299	3.3459E-8	891300	3.3693E-8
892321	3.3421E-8	892322	3.3667E-8
893342	3.4894E-8	893343	3.3615E-8
894364	3.1686E-8	894365	3.3579E-8
895385	3.3027E-8	895386	3.3642E-8
896407	4.0311E-8	896408	3.3516E-8
897428	4.0253E-8	897429	3.3592E-8
898450	4.839E-8	898451	3.354E-8
899471	5.751E-8	899472	3.3525E-8
900493	6.0274E-8	900494	3.3591E-8
901514	6.0993E-8	901515	3.355E-8
902536	6.1111E-8	902537	3.3587E-8
903557	6.1315E-8	903558	3.3566E-8
904579	6.0711E-8	904580	3.4098E-8
905600	5.135E-8	905601	3.2744E-8
906622	4.1106E-8	906623	3.1376E-8
907643	3.7089E-8	907644	3.2708E-8
908665	3.6074E-8	908666	3.3817E-8
909686	3.5673E-8	909687	3.4572E-8
910708	3.5471E-8	910709	3.4674E-8
911729	3.5399E-8	911730	3.4638E-8
912751	3.5314E-8	912752	3.4658E-8
913772	3.5255E-8	913773	3.4662E-8
914794	3.5136E-8	914795	3.4704E-8
915815	3.5254E-8	915816	3.4726E-8
916837	3.5138E-8	916838	3.4748E-8
917858	3.5091E-8	917859	3.4788E-8
918880	3.5158E-8	918881	3.5067E-8
919901	3.5088E-8	919902	3.5314E-8
920923	3.5005E-8	920924	3.5308E-8
921944	3.507E-8	921945	3.5372E-8
922966	3.4982E-8	922967	3.5349E-8
923987	3.4885E-8	923988	3.5425E-8
925009	3.4874E-8	925010	3.5346E-8
926030	3.4893E-8	926031	3.5379E-8

927052	3.4865E-8	927053	3.5503E-8
928073	3.4861E-8	928074	3.5342E-8
929095	3.4863E-8	929096	3.5363E-8
930116	3.4839E-8	930117	3.5387E-8
931138	3.4737E-8	931139	3.5354E-8
932159	3.4738E-8	932160	3.5365E-8
933181	3.4739E-8	933182	3.5311E-8
934202	3.4656E-8	934203	3.53E-8
935224	3.4641E-8	935225	3.5237E-8
936245	3.4692E-8	936246	3.52E-8
937267	3.4612E-8	937268	3.5214E-8
938288	3.4595E-8	938289	3.5216E-8
939310	3.4501E-8	939311	3.5178E-8
940331	3.4579E-8	940332	3.5181E-8
941353	3.4615E-8	941354	3.51E-8
942374	3.4472E-8	942375	3.504E-8
943396	3.4502E-8	943397	3.5157E-8
944417	3.4523E-8	944418	3.5054E-8
945439	3.4357E-8	945440	3.5029E-8
946460	3.4428E-8	946461	3.5099E-8
947482	3.4417E-8	947483	3.5031E-8
948503	3.4333E-8	948504	3.4948E-8
949525	3.4326E-8	949526	3.5002E-8
950546	3.4339E-8	950547	3.4931E-8
951568	3.4298E-8	951569	3.4897E-8
952589	3.4261E-8	952590	3.4891E-8
953611	3.4317E-8	953612	3.4933E-8
954632	3.4303E-8	954633	3.4873E-8
955654	3.4269E-8	955655	3.4884E-8
956675	3.4204E-8	956676	3.478E-8
957697	3.4271E-8	957698	3.4782E-8
958718	3.4213E-8	958719	3.4798E-8
959740	3.4229E-8	959741	3.4751E-8
960761	3.4186E-8	960762	3.4651E-8
961783	3.4187E-8	961784	3.4732E-8
962804	3.407E-8	962805	3.4697E-8
963826	3.4101E-8	963827	3.4637E-8
964847	3.4073E-8	964848	3.4713E-8
965869	3.4062E-8	965870	3.4608E-8
966890	3.4062E-8	966891	3.4531E-8
967912	3.4155E-8	967913	3.4561E-8

968933	3.403E-8	968934	3.4577E-8
969955	3.4082E-8	969956	3.4499E-8
970976	3.4041E-8	970977	3.4512E-8
971998	3.3983E-8	971999	3.4494E-8
973019	3.397E-8	973020	3.4447E-8
974041	3.4009E-8	974042	3.4409E-8
975062	3.3935E-8	975063	3.4413E-8
976084	3.4059E-8	976085	3.4372E-8
977105	3.3941E-8	977106	3.4405E-8
978127	3.3933E-8	978128	3.432E-8
979148	3.3904E-8	979149	3.4449E-8
980170	3.3923E-8	980171	3.4378E-8
981191	3.3892E-8	981192	3.4247E-8
982213	3.3881E-8	982214	3.4343E-8
983234	3.3967E-8	983235	3.4343E-8
984256	3.3914E-8	984257	3.4208E-8
985277	3.3839E-8	985278	3.4309E-8
986299	3.3963E-8	986300	3.4226E-8
987320	3.3823E-8	987321	3.421E-8
988342	3.3783E-8	988343	3.4183E-8
989363	3.3882E-8	989364	3.4238E-8
990385	3.3825E-8	990386	3.4139E-8
991406	3.3796E-8	991407	3.4115E-8
992428	3.3777E-8	992429	3.4156E-8
993449	3.3847E-8	993450	3.4124E-8
994471	3.3775E-8	994472	3.407E-8
995492	3.3724E-8	995493	3.4152E-8
996514	3.3007E-8	996515	3.4182E-8
997535	3.1888E-8	997536	3.4125E-8
998557	3.0748E-8	998558	3.4081E-8
999578	2.9803E-8	999579	3.4105E-8
1000600	2.8871E-8	1000600	3.4033E-8
1001621	2.8045E-8	1001622	3.4011E-8
1002643	2.7356E-8	1002643	3.4034E-8
1003664	2.6777E-8	1003665	3.4069E-8
1004686	2.6236E-8	1004687	3.4008E-8
1005707	2.5774E-8	1005708	3.3969E-8
1006729	2.5472E-8	1006729	3.3982E-8
1007750	2.5192E-8	1007751	3.3439E-8
1008772	2.4917E-8	1008772	3.2367E-8
		1009794	3.1322E-8

		1010816	3.0412E-8
		1011837	2.945E-8
		1012859	2.8594E-8
		1013880	2.7857E-8

Table S6: *raw data for Fig. 7 for TDMAT-NH_3 showing survey scans during deposition, MID scans for m/z = 44 and m/z = 45 created during both the plasma and thermal processes*

	Survey scans				MID scans				
PLASMA		THERMAL		PLASMA			THERMAL		
m/z	**Partial pressure**	**m/z**	**Partial pressure**	**Time**	**Partial pressure (mbar)**	**Partial pressure (mbar)**	**Time**	**Partial pressure (mbar)**	**Partial pressure (mbar)**
	mbar		**mbar**	**(ms)**	**m/z = 44**	**m/z = 45**	**(ms)**	**m/z = 44**	**m/z = 45**
1	4.34E-11	1	6.17E-11	7664	5.78E-10	1.97E-11	7664	4.88E-10	1.73E-11
2	7.42E-9	2	2.54E-9	33670	4.7E-10	1.7E-11	33670	4.74E-10	1.77E-11
3	1.32E-11	3	6.56E-12	59676	4.86E-10	2.88E-11	59676	4.7E-10	2.18E-11
4	1.01E-10	4	1.08E-10	85682	4.57E-10	2.52E-11	85682	4.7E-10	1.41E-11
5	2.26E-12	5	-4.9E-12	111688	6.39E-10	9.38E-11	111689	5.94E-10	8.26E-11
6	-4.4E-12	6	-3.01E-12	137695	4.8E-10	3.23E-11	137695	4.8E-10	3.82E-11
7	4.89E-11	7	3.06E-11	163701	4.79E-10	2.19E-12	163701	4.74E-10	3.54E-11
8	3.21E-12	8	-2.95E-12	189707	4.7E-10	4.17E-11	189707	4.79E-10	3.48E-11
9	2.32E-12	9	-1.63E-12	215714	4.8E-10	3.35E-11	215714	4.91E-10	1.69E-11
10	6.64E-12	10	-6.51E-12	241720	4.69E-10	2.1E-11	241720	4.86E-10	8.2E-12
11	2.98E-12	11	-3.79E-12	267726	4.65E-10	8.77E-12	267726	4.96E-10	1.21E-11
12	1.83E-11	12	2.12E-11	293732	4.74E-10	1.05E-10	293732	4.96E-10	1.42E-10
13	7.24E-11	13	8.38E-11	319739	5.34E-10	3.97E-11	319738	5.26E-10	6.53E-11
14	1.08E-8	14	1.08E-8	345745	4.78E-10	3.07E-11	345745	5.02E-10	3.14E-11
15	5.95E-10	15	6.58E-10	371751	4.78E-10	2.2E-11	371751	4.88E-10	2.4E-11
16	3.45E-9	16	4.93E-9	397757	4.71E-10	2.12E-11	397757	4.81E-10	3.84E-11
17	4.95E-9	17	6.74E-9	423764	4.85E-10	3.06E-11	423763	5.03E-10	1.43E-11
18	3.23E-9	18	3.05E-9	449770	5.14E-10	2.35E-11	449769	5.06E-10	1.28E-11
19	7.79E-11	19	7.61E-11	475776	4.91E-10	8.15E-12	475776	4.86E-10	3.31E-11
20	1.08E-8	20	1.08E-8	501782	7.6E-10	9.32E-11	501782	6.27E-10	9.66E-11
21	7.97E-12	21	1.92E-12	527789	5.03E-10	2.7E-11	527788	5.15E-10	4.31E-11
22	8.32E-12	22	1.3E-11	553795	4.99E-10	1.66E-11	553795	5.1E-10	1.81E-11
23	4.06E-12	23	-5.93E-12	579801	4.92E-10	2.22E-11	579801	4.76E-10	3.57E-11
24	-1.84E-12	24	1.64E-11	605807	4.96E-10	3.62E-11	605807	5.13E-10	3.08E-11
25	5.74E-12	25	4.49E-12	631814	4.83E-10	2.02E-11	631813	5.09E-10	3.06E-11
26	4.63E-11	26	3.88E-11	657820	4.89E-10	2.27E-11	657819	5.12E-10	2.02E-11
27	1.07E-9	27	1.08E-9	683826	4.95E-10	1.99E-11	683826	5.07E-10	4.79E-11
28	1.08E-8	28	1.08E-8	709832	6.14E-10	5.23E-11	709832	5.81E-10	4.97E-11
29	1.08E-8	29	1.08E-8	735839	5.06E-10	2.55E-11	735838	5.05E-10	3.96E-11
30	5.14E-10	30	5.52E-10	761845	4.84E-10	4.58E-11	761845	4.95E-10	3.19E-11
31	5.71E-11	31	3.42E-11	787851	4.98E-10	3.16E-11	787851	5.06E-10	2.82E-11
32	3.86E-10	32	3.76E-10	813857	5.08E-10	3.13E-11	813857	5,00E-10	3.28E-11
33	1.26E-11	33	1.95E-11	839864	5.06E-10	2.51E-11	839863	5.35E-10	1.61E-11
34	1.32E-11	34	8.06E-12	865870	5.19E-10	2.48E-11	865870	5.24E-10	2.65E-11
35	1.25E-11	35	6.89E-12	891876	5.03E-10	1.73E-10	891876	7.12E-10	1.11E-10
36	1.25E-11	36	6.89E-12	917882	5.25E-10	4.58E-11	917882	5.33E-10	5.59E-11
37	1.95E-11	37	9.01E-12	943889	5.01E-10	3.22E-11	943888	5.08E-10	4,00E-11
38	4.03E-10	38	3.97E-10	969895	4.9E-10	3.22E-11	969895	4.99E-10	3.42E-11
39	1.87E-10	39	1.86E-10						
40	1.08E-8	40	1.08E-8						
41	9.24E-11	41	8.74E-11						
42	1.77E-10	42	1.76E-10						
43	5.34E-11	43	3.8E-11						
44	5.08E-10	44	4.86E-10						
45	3.83E-11	45	3.03E-11						
46	2.24E-12	46	6.26E-14						
47	1.13E-11	47	3.33E-12						
48	1.21E-11	48	2.62E-12						
49	3.8E-12	49	1.38E-11						
50	2.44E-12	50	2.05E-12						

Table S7: *raw data for Fig.9 for the Arrhenius plots for the NH_3 pulse during both the plasma and thermal processes*

1000/T (1/K)	ln k	Temperature	1000/T (1/K)	ln k
NH3 plasma pulse	**Plasma**	**° C**	**NH3 thermal pulse**	**Thermal**
0.00236	-6.64539	150	0.00236	-6.81245
0.00211	-5.71383	200	0.00211	-6.21461
0.00191	-5.3817	250	0.00191	-5.03595
0.00174	-4.50081	300	0.00174	-4.7217