

Spreadsheet to Calculate Charging Mechanisms											
Parameters	Values	Units			Parameters	Values	Units				
k	1.38E-16	boltzmann's constant			Ni	1.00E+07	ion concentration				
e	4.80E-10	electronic charge			Zi	450	ion mobility				
c	2.40E+04	ion velocity			T	293	absolute temperature				
epsilon	5	dielectric constant			E	5000	electric field, volts/cm	16.67	statvolts/cm		
				field			field			field	
		t= 0.1		fraction	t= 1		fraction	t= 10		fraction	
Size, um	Size, cm	diffusion	field	0.1 second	diffusion	field	1	diffusion	field	10	
0.1	0.00001	1.0	0.8	0.43	2.7	1.6	0.37	4.7	1.8	0.28	
0.2	0.00002	2.9	3.0	0.51	6.6	6.5	0.49	10.6	7.3	0.41	
0.4	0.00004	7.9	12.0	0.60	15.7	25.9	0.62	23.7	29.3	0.55	
0.8	0.00008	20.4	48.1	0.70	36.2	103.8	0.74	52.3	117.3	0.69	
1.6	0.00016	50.1	192.5	0.79	82.0	415.0	0.83	114.3	469.3	0.80	
3.2	0.00032	119.2	770.0	0.87	183.5	1660.1	0.90	248.1	1877.1	0.88	
6.4	0.00064	276.9	3080.1	0.92	405.8	6640.5	0.94	535.1	7508.4	0.93	
12.8	0.00128	631.3	12320.3	0.95	889.5	26561.9	0.97	1148.1	30033.6	0.96	
25.6	0.00256	1417.8	49281.2	0.97	1934.7	106247.5	0.98	2451.9	120134.4	0.98	

