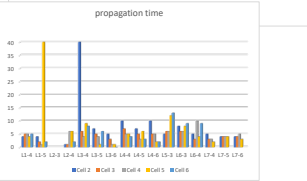
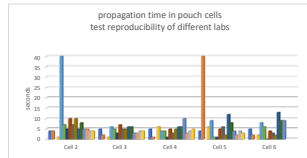


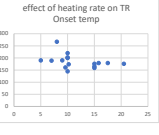
cell type	heating device	heating rate	max temp	Temp 3rd Col	Closed channel	seconds	time of TR	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 1	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	comments
							delta sec	delta sec	delta sec	delta sec	delta sec	delta sec	Max temp	Max temp	Max temp	Max temp	Max temp	Max temp	Onset temp	Voltage drop	Voltage drop	Voltage drop	Voltage drop	Voltage drop	Voltage drop	
L1-4	NMC/Pouch	Omega Heats	5	850	N	3208	4	5	5	4	5	534	1800	794	782	649	741	190	4.138	4.134	4.132	4.13	4.14	4.15	4.155	
L3-3	NMC/Pouch	Omega Heats	9	825	N	1212	4	2	1	91	2	794	825	694	643	823	769	181	4.136	4.13	4.16	4.14	4.16	4.15	4.155	
L3-5	NMC/Pouch	Omega Heats	9.6	841	N	900																				
L3-6	NMC/Pouch	Omega Heats	10.2	1012	N	900	1	1	6	6	2	794	780	826	801	809	1012	809	1012	775	174	4.135	4.15	4.16	4.16	4.15
L3-4	NMC/Pouch	Capton Heats	17.5	826	Y	577	43	6	4	9	8	785	805	826	808	808	774	717	179	4.148	4.146	4.147	4.149	4.146	4.148	Cell 3 at 68°C when TR of Cell 1
L3-5	NMC/Pouch	Capton Heats	20.5	826	Y	515	7	5	4	1	6	1014	819	841	830	821	709	176	4.147	4.146	4.147	4.149	4.143	4.146		
L3-6	NMC/Pouch	Capton Heats	15.8	826	Y	586	5	3	1	1	0	871	1164	825	802	793	705	179	4.148	4.146	4.147	4.149	4.144	4.148		
L4-4	NMC/Pouch	Kaiston Therm	10	2.5	N	2400	10	7	5	5	4	750	800	1000	1000	1000	1000	200	4.14	4.14	4.14	4.14	4.14	4.14	4.14	
L4-5	NMC/Pouch	Kaiston Therm	10	2.5	N	5050	7	5	3	6	3	1000	900	900	900	900	200	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	
L4-6	NMC/Pouch	Kaiston Therm	10	2.5	N	4955	10	5	5	2	2	800	840	990	990	1000	1000	145	4.14	4.14	4.14	4.14	4.14	4.14	4.14	
L5-3	NMC/Pouch	Mitsco Heats	7	832	122	1591	5	6	6	12	15	681.1	727.7	725.4	741.7	831.9	596.4	189	4.14	4.14	4.14	4.14	4.14	4.14	4.14	
L5-3	NMC/Pouch	Heating pad	10	780	N	1659	8	6	6	8	9	880	780	700	700	170	490	202	4.1786031	4.18554974	4.17213678	4.18081762	4.1782074	4.17414917		
L6-4	NMC/Pouch	Heating pad	8	860	N	1675	5	3	10	4	9	860	834	850	841	831	830	267	4.17292032	4.17278624	4.17292972	4.18616122	4.17619889	4.17739391		
L7-4	NMC/Pouch	Heating pad	15	995	N	770	5	3	3	2	935	934	877	908	787	165	165	4.17	4.17	4.17	4.17	4.17	4.17	4.17		
L7-5	NMC/Pouch	Heating pad	15	1331	N	640	4	4	4	4	4	863	1331	979	943	933	176	4.17	4.17	4.17	4.17	4.17	4.17	4.17		
L7-6	NMC/Pouch	Heating pad	15	1352	N	605	4	4	5	3	1352	912	934	973	985	159	159	4.17	4.17	4.17	4.17	4.17	4.17	4.17		

Average	Std deviation	756.46875	122	1637.8125	8.13333333	4.33333333	4.53333333	10.53333333	5.25	850.81875	931.79375	857.3375	845.41875	903.92667	769.375	186.75	4.13741281	4.144396	4.15046464	4.14927749	4.15284921	4.15571152
		756.46875 <td>122 <td>1637.8125 <td>8.13333333 <td>4.33333333 <td>4.53333333 <td>10.53333333 <td>5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td>	122 <td>1637.8125 <td>8.13333333 <td>4.33333333 <td>4.53333333 <td>10.53333333 <td>5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td>	1637.8125 <td>8.13333333 <td>4.33333333 <td>4.53333333 <td>10.53333333 <td>5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td>	8.13333333 <td>4.33333333 <td>4.53333333 <td>10.53333333 <td>5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td></td></td></td></td>	4.33333333 <td>4.53333333 <td>10.53333333 <td>5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td></td></td></td>	4.53333333 <td>10.53333333 <td>5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td></td></td>	10.53333333 <td>5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td></td>	5.25 <td>850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td></td>	850.81875 <td>931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td></td>	931.79375 <td>857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td></td>	857.3375 <td>845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td></td>	845.41875 <td>903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td></td>	903.92667 <td>769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td></td>	769.375 <td>186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td></td>	186.75 <td>4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td></td>	4.13741281 <td>4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td></td>	4.144396 <td>4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td></td>	4.15046464 <td>4.14927749 <td>4.15284921 <td>4.15571152</td> </td></td>	4.14927749 <td>4.15284921 <td>4.15571152</td> </td>	4.15284921 <td>4.15571152</td>	4.15571152

Cell 2	Cell 3	Cell 4	Cell 5	Cell 6
L3-4	4	5	5	4
L3-5	4	2	1	91
L3-6	1	1	6	6
L4-4	43	6	4	9
L4-5	7	5	4	1
L4-6	5	3	1	0
L5-3	10	7	5	5
L5-3	10	7	5	4
L6-4	10	5	5	2
L6-4	10	5	6	12
L6-4	8	6	6	8
L6-4	5	3	10	4
L7-4	5	3	3	2
L7-5	4	4	4	4
L7-6	4	4	5	3



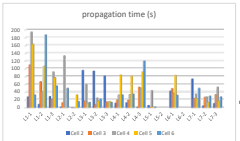
heating rate (Onset temp	Onset temp
5	190
9	190
9.6	161
10.2	174
17.5	179
20.5	179
15.8	179
10	200
10	220
10	145
7	189
10	202
8	267
15	165
15	176
15	159



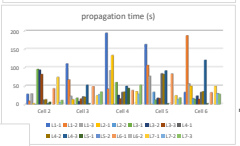
cell type		heating device	heating rate	max temp [°C]	Temp 3rd Cell	Closed chain	seconds	time of TR	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	comments					
								delta sec	delta sec	delta sec	delta sec	delta sec	delta sec	Max temp	Max temp	Max temp	Max temp	Max temp	Max temp						
L5-1	NMAG/cylindri	Omega heats	10	818	N		9050	28	120	124	163	33	711	779	806	831	838	828	155	4.165	4.16	4.164	4.165	4.161	
L5-2	NMAG/cylindri	Omega heats	11	815	N		1102	9	67	42	106	187	722	815	637	679	789	789	400	200	4.164	4.165	4.165	4.163	4.16
L5-3	NMAG/cylindri	Omega heats	12	817	N		600	29	22	92	77	56	834	820	808	817	867	867	200	200	4.16	4.155	4.151	4.154	4.156
L5-1	NMAG/cylindri	Heating tape	10.7	984	N		600	2	13	133	1	50	984	879	587	847	704	797.682778	140	4.18	4.1773705	4.159586	4.158926	4.1774881	
L5-2	NMAG/cylindri	Heating tape	10.6	989	N		600	6	8	1	31	16	26	829	867	266	446	683	142	4.1774846	4.1774846	4.1774846	4.1774846	4.1774846	
L5-1	NMAG/cylindri	20 Watt cars	20.5	853	Y		575	96	17	60	12	14	853	825	815	847	838	748	130	4.165	4.165	4.165	4.165	4.165	
L5-2	NMAG/cylindri	20 Watt cars	18	932	Y		433	94	8	25	17	21	761	912	846	862	858	868	130	4.163	4.163	4.166	4.164	4.163	
L5-3	NMAG/cylindri	20 Watt cars	20.5	858	Y		581	82	15	15	16	14	848	842	844	824	835	822	200	4.16	4.158	4.158	4.15	4.158	
L4-1	NMAG/cylindri	Keaton therm	10	1000	N		2135	12	21	33	84	33	900	900	850	850	1000	1000	179	4.18	4.18	4.18	4.18	4.18	
L4-2	NMAG/cylindri	Keaton therm	10	1000	N		2121	12	20	34	82	35	900	900	850	850	1000	1000	174	4.18	4.18	4.18	4.18	4.18	
L4-3	NMAG/cylindri	Keaton therm	10	1000	N		2418	2	13	50	92	120	1000	1000	800	800	825	600	182	4.18	4.18	4.18	4.18	4.18	
L5-1	NMAG/cylindri	Minion	18	850	35 Y		982	6	2	44	2	2	792.7	805.9	802.5	795.5	799.9	824.1	267	4.18	4.18	4.19	4.19	4.19	
L5-2	NMAG/cylindri	Minion	18	750	35 Y		624	3	3	3	3	3	762.1	762.1	762.1	762.1	762.1	762.1	268	4.18	4.18	4.18	4.18	4.18	
L5-1	NMAG/cylindri	Heating pad	7	1800	N		1778	43	49	38	83	32	1394	1320	1875	1250	1540	1700	197	4.18	4.17	4.17	4.18	4.18	
L5-2	NMAG/cylindri	Heating pad	7	1800	N		1130	1	1	1	1	1	1130	115	60	60	60	60	199	4.17	4.19	4.21	4.21	4.21	
L7-1	NMAG/cylindri	Heating pad	20	802	N		258	74	24	35	24	50	802	736	736	754	736	789	130	4.1628	4.1629	4.1639	4.1591	4.163	
L7-2	NMAG/cylindri	Heating pad	20	804	N		481	5	27	28	14	20	904	728	691	774	720	819	286	4.16	4.16	4.16	4.17	4.16	
L7-3	NMAG/cylindri	Heating pad	20	810	N		378	11	34	53	18	28	764	717	730	745	713	810	189	4.16	4.17	4.16	4.17	4.16	

Average	987.833333	35	967.655556	31.625	38.125	54.8125	51.5	45.1875	859.929418	787.830494	778.727778	751.2697901	777.4589136	756.848932	778.479588	4.5887929	3.7212464	3.70338637	3.70405332	3.7033578	3.70686925
Std deviation	346.26839	0	646.884481	34.3358937	28.662296	48.212475	47.12395	46.27918	617.2851219	277.878002	375.769383	179.662066	321.7712462	361.74673	30.8612121	6.01817786	1.2807445	1.3407038	1.34461218	1.34738667	1.34617943
			35.5656567					790.421534													
			32.4227199					289.295638													

Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	
L5-1	28	110	194	163	33
L5-2	9	67	42	106	187
L5-3	29	22	92	77	56
L5-1	2	18	153	1	50
L5-2	0	5	33	16	16
L5-3	96	17	60	12	14
L5-1	94	8	25	17	23
L5-2	82	15	15	16	14
L5-3	12	11	33	84	33
L4-1	13	20	34	82	35
L4-2	13	20	34	82	35
L4-3	2	53	50	92	120
L5-1	6	2	44	2	2
L5-2	43	40	38	83	32
L5-3	24	24	35	24	50
L7-1	5	27	28	14	30
L7-2	11	34	53	18	28



repeatability better than reproducibility



more variability than prismatic: quality of contact?

heating rate / Onset temp	
10	195
11	200
12	200
13	200
14	200
15	200
16	200
17	200
18	200
19	200
20	200
21	200
22	200
23	200
24	200
25	200
26	200
27	200
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95	200
96	200
97	200
98	200
99	200
100	200

