

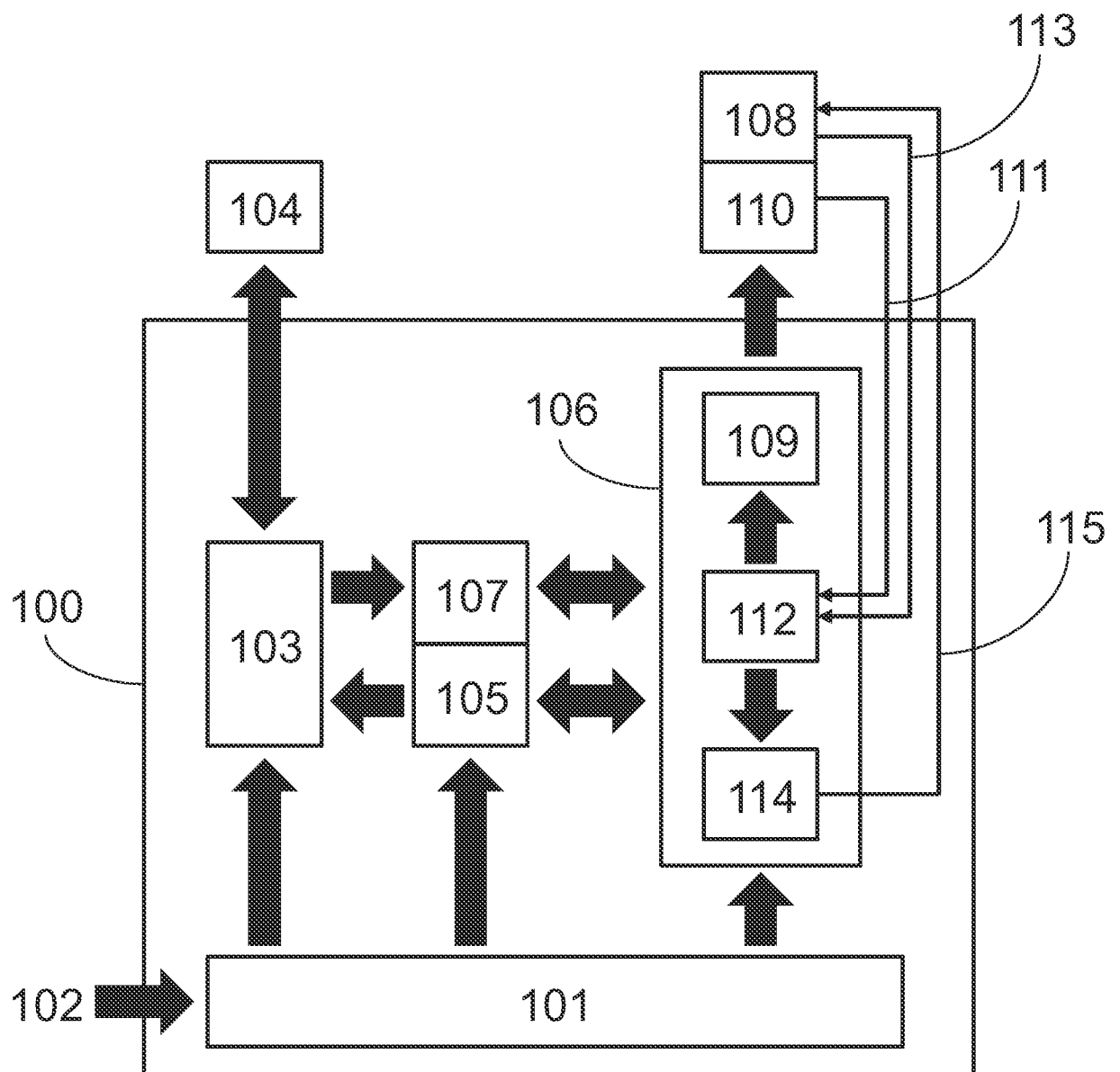


Figure 1

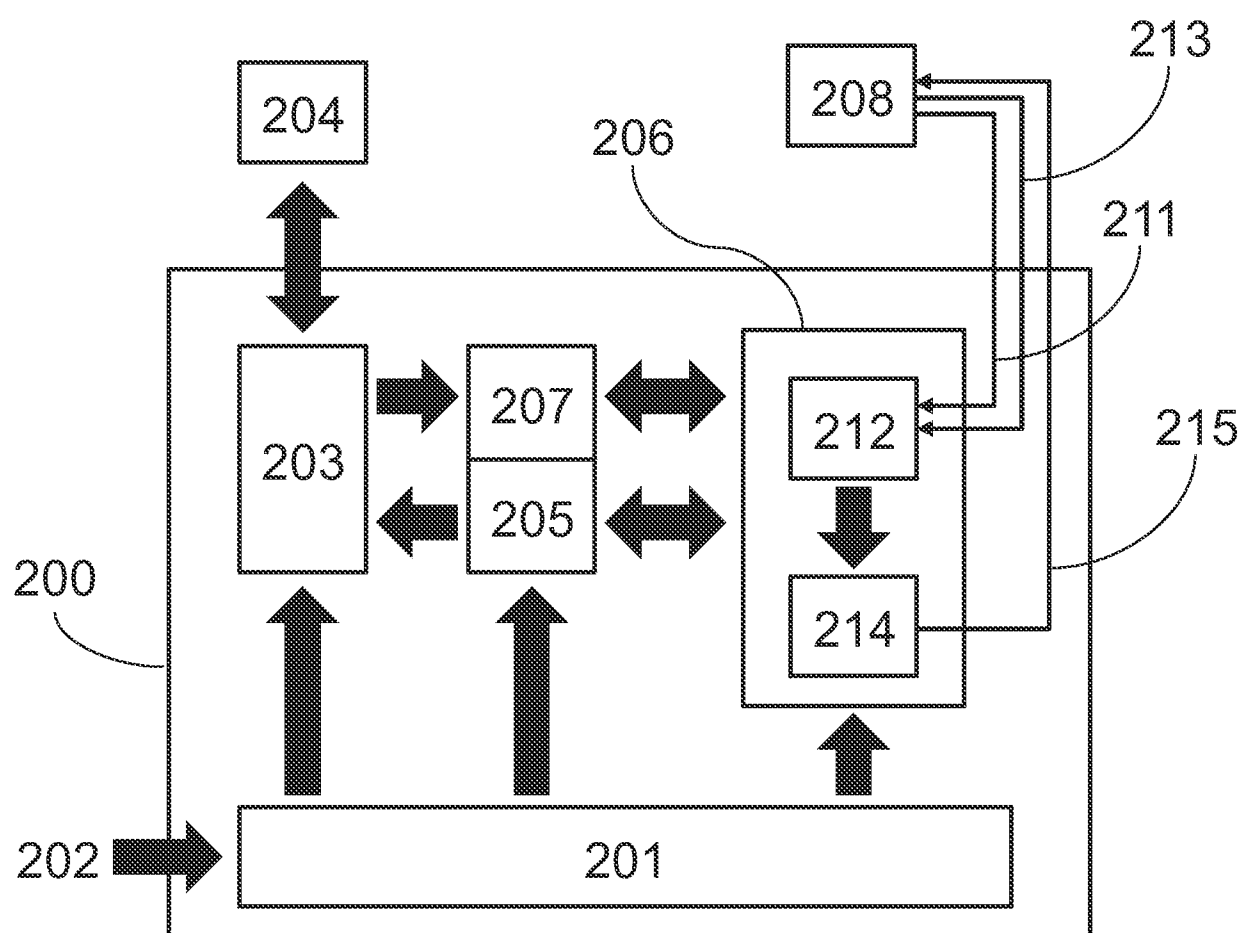


Figure 2

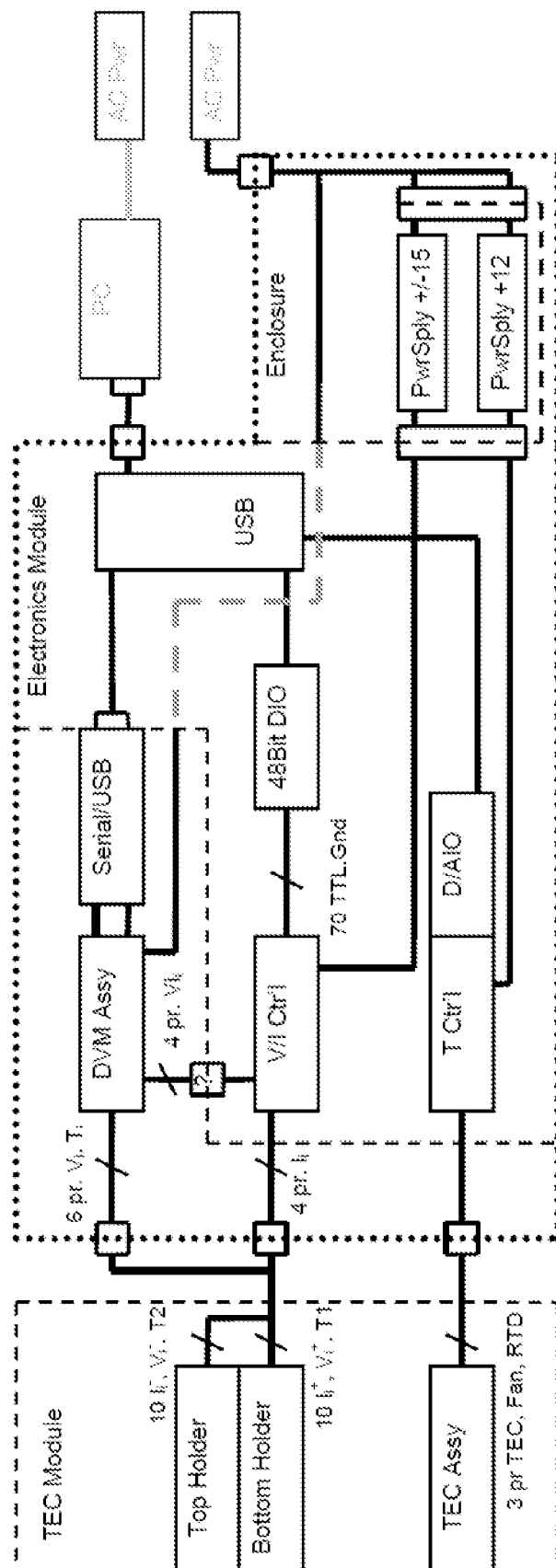


Figure 3

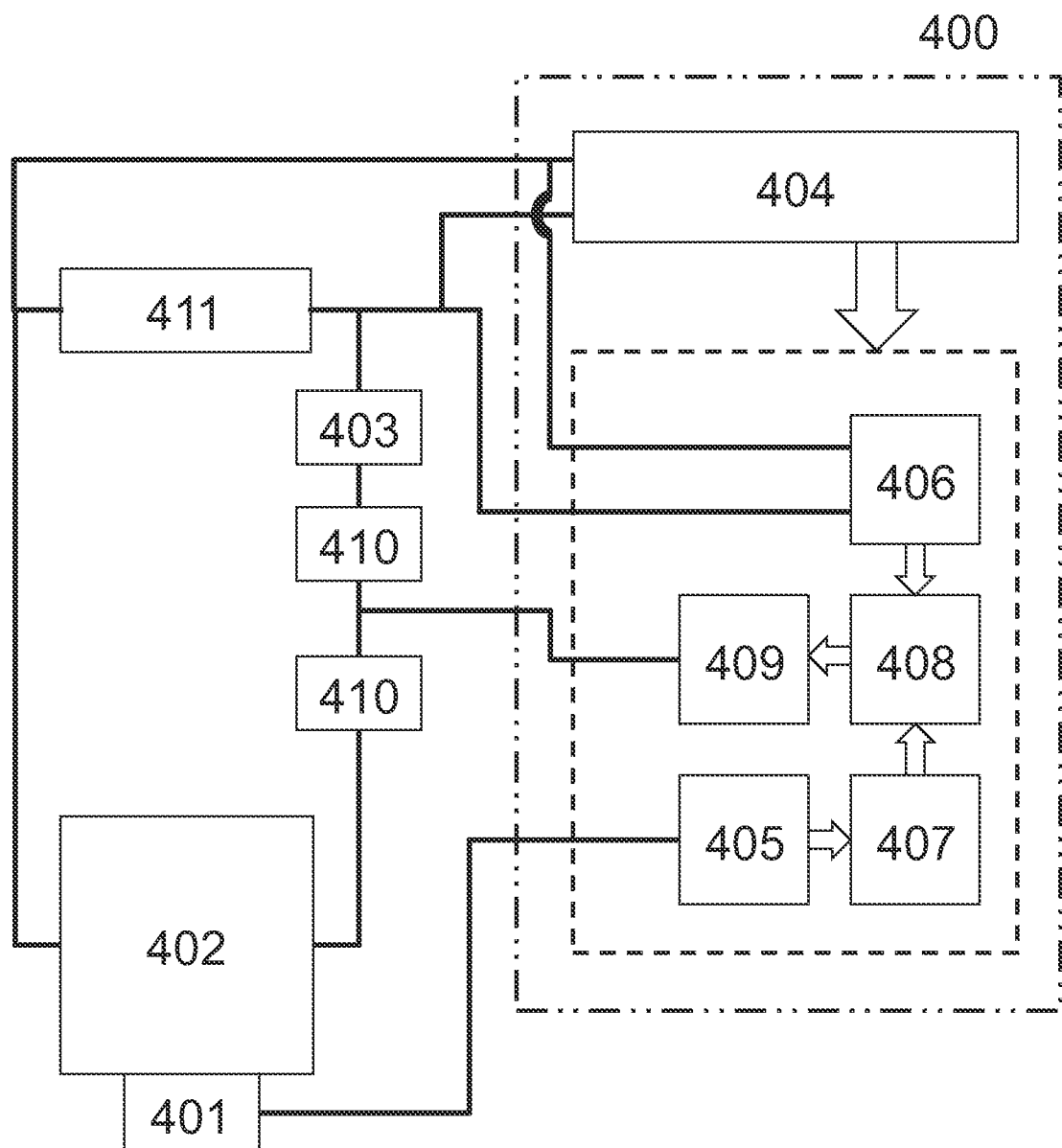


Figure 4

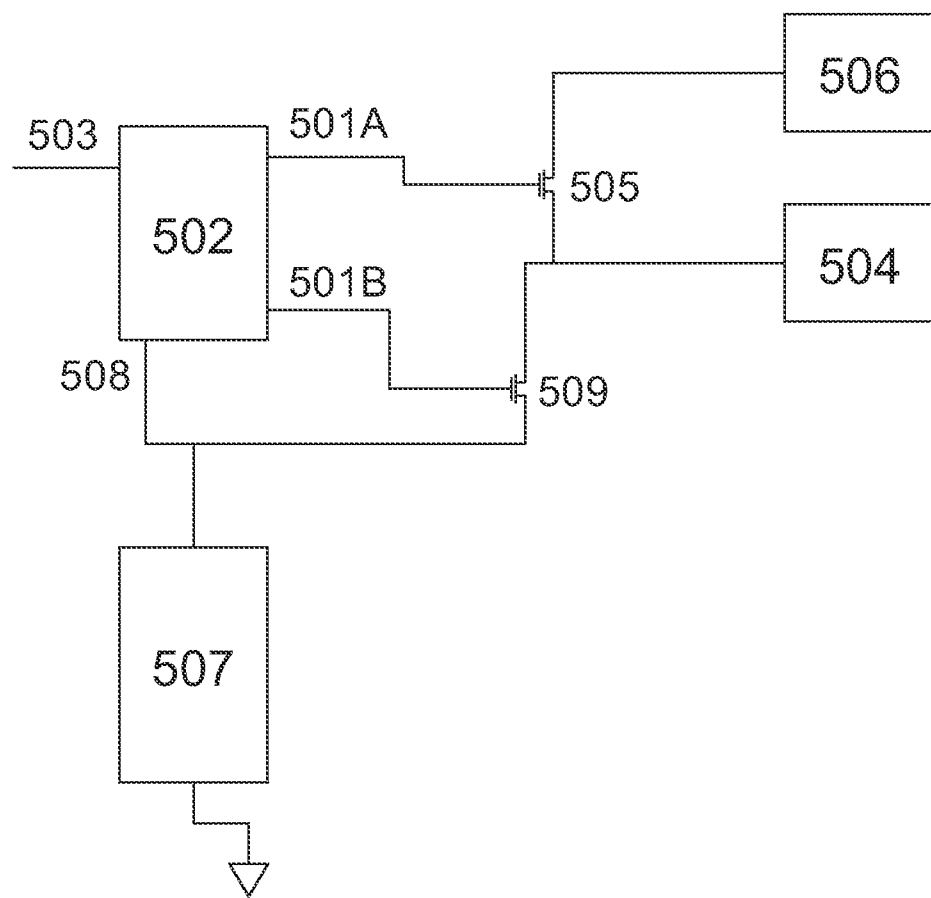


Figure 5

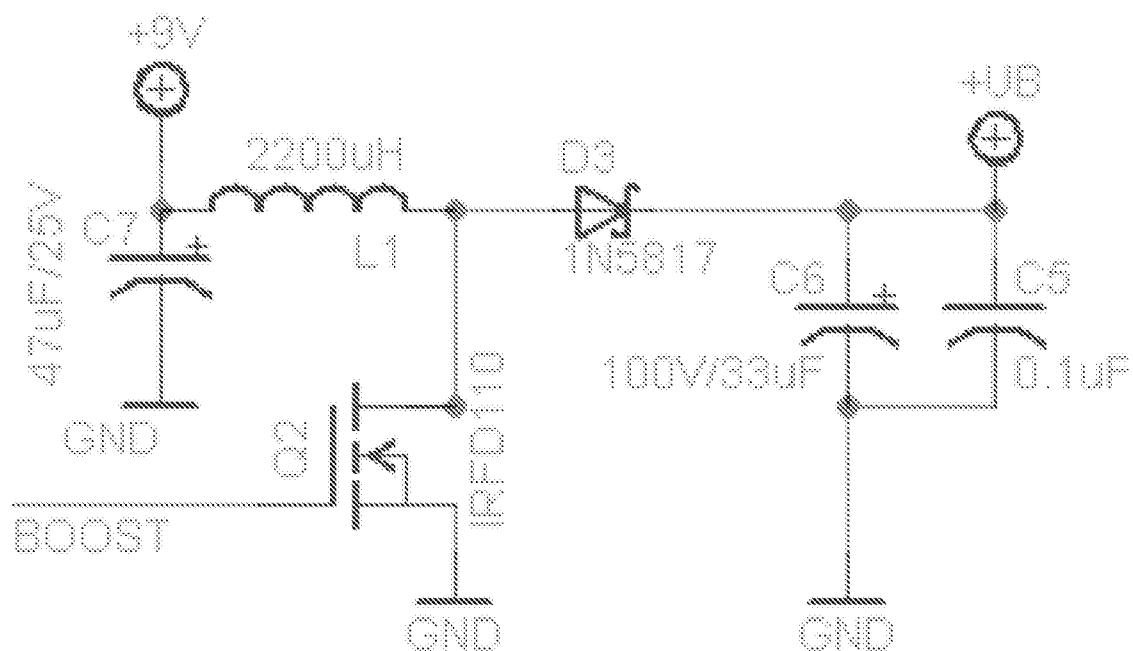


Figure 6A

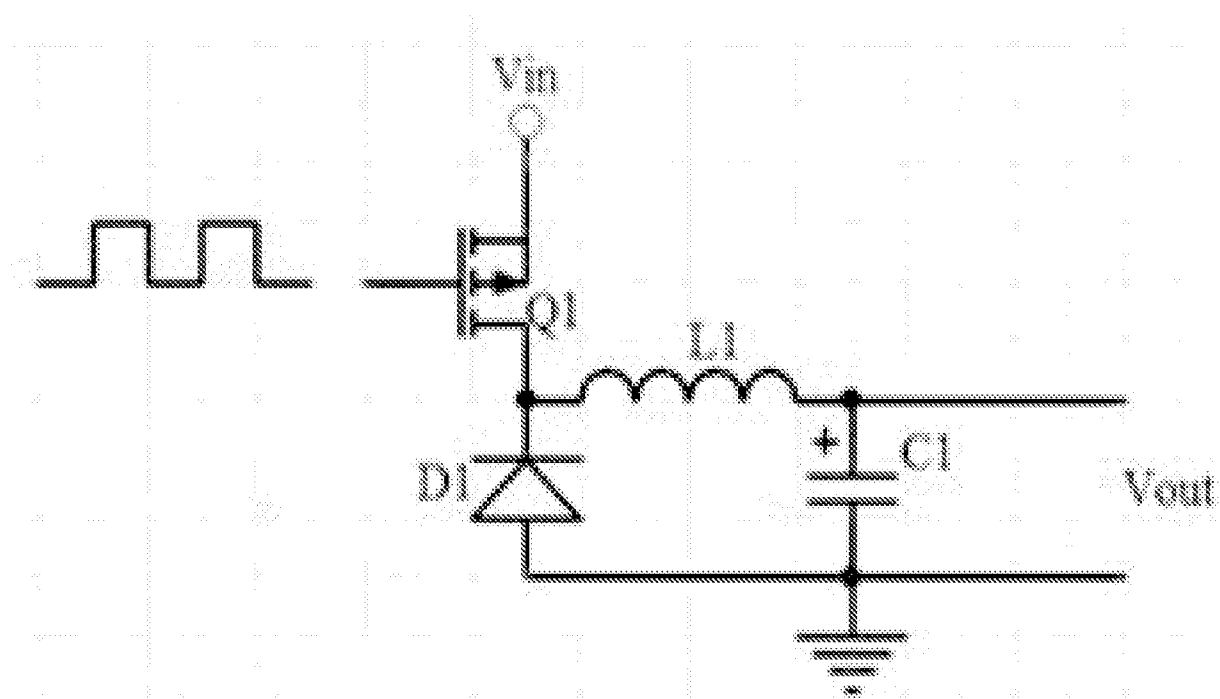


Figure 6B

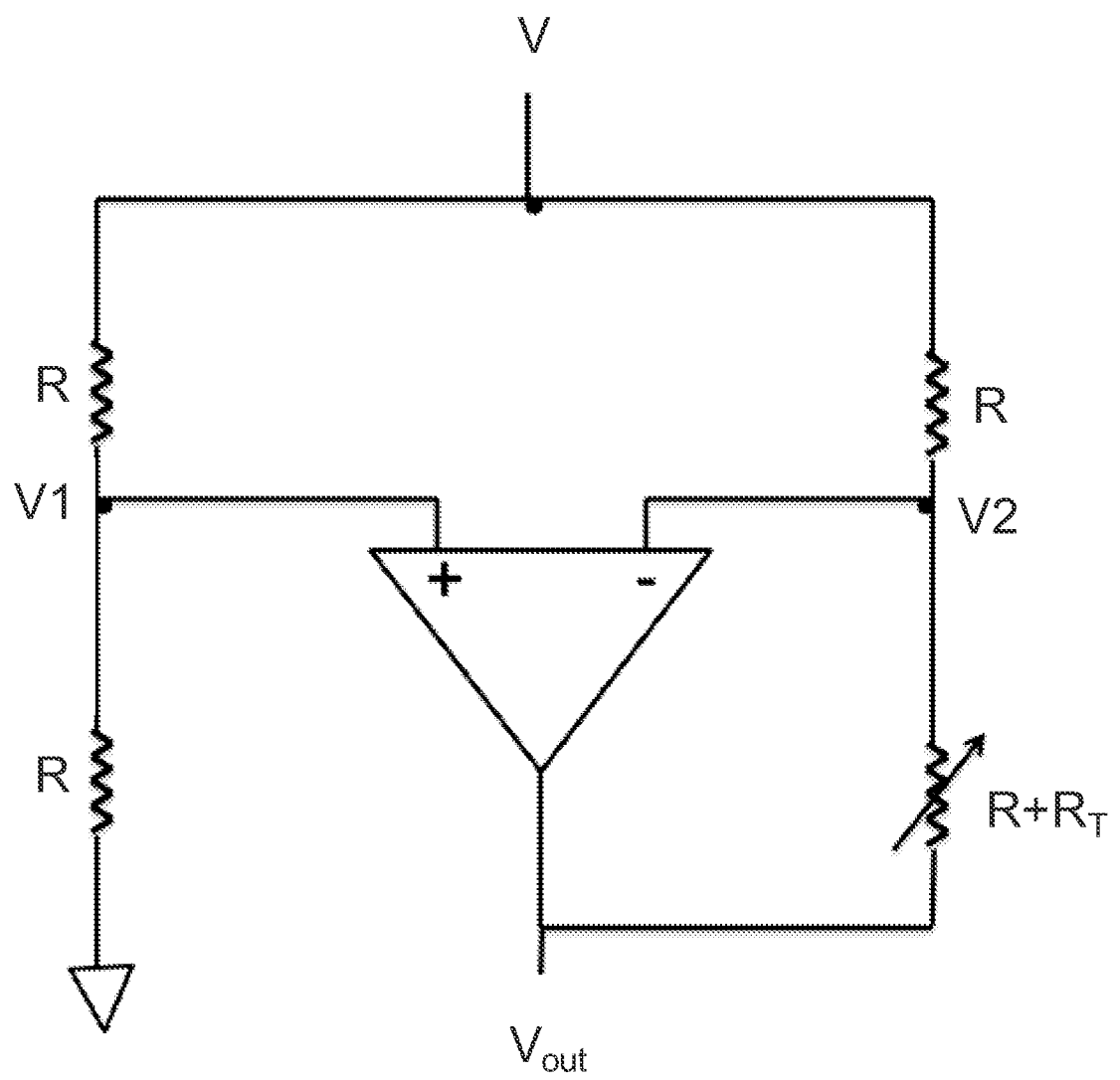
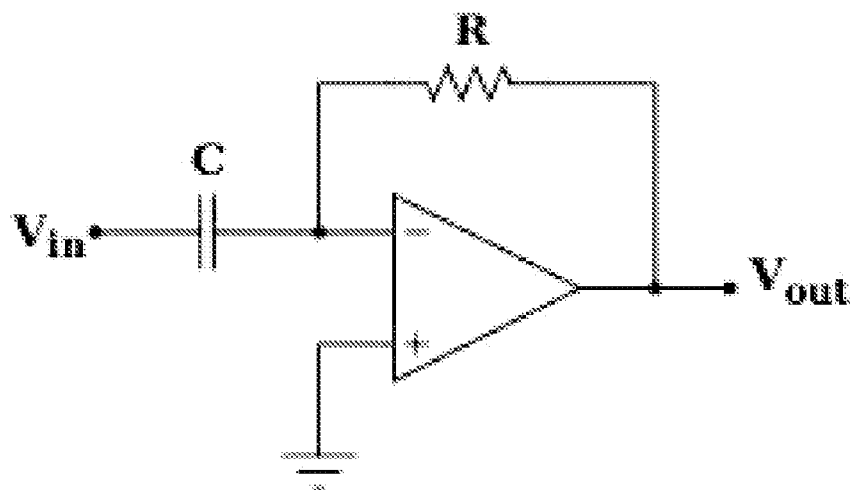


Figure 7



$$V_{out} = -RC \frac{dV_{in}}{dt}$$

Figure 8

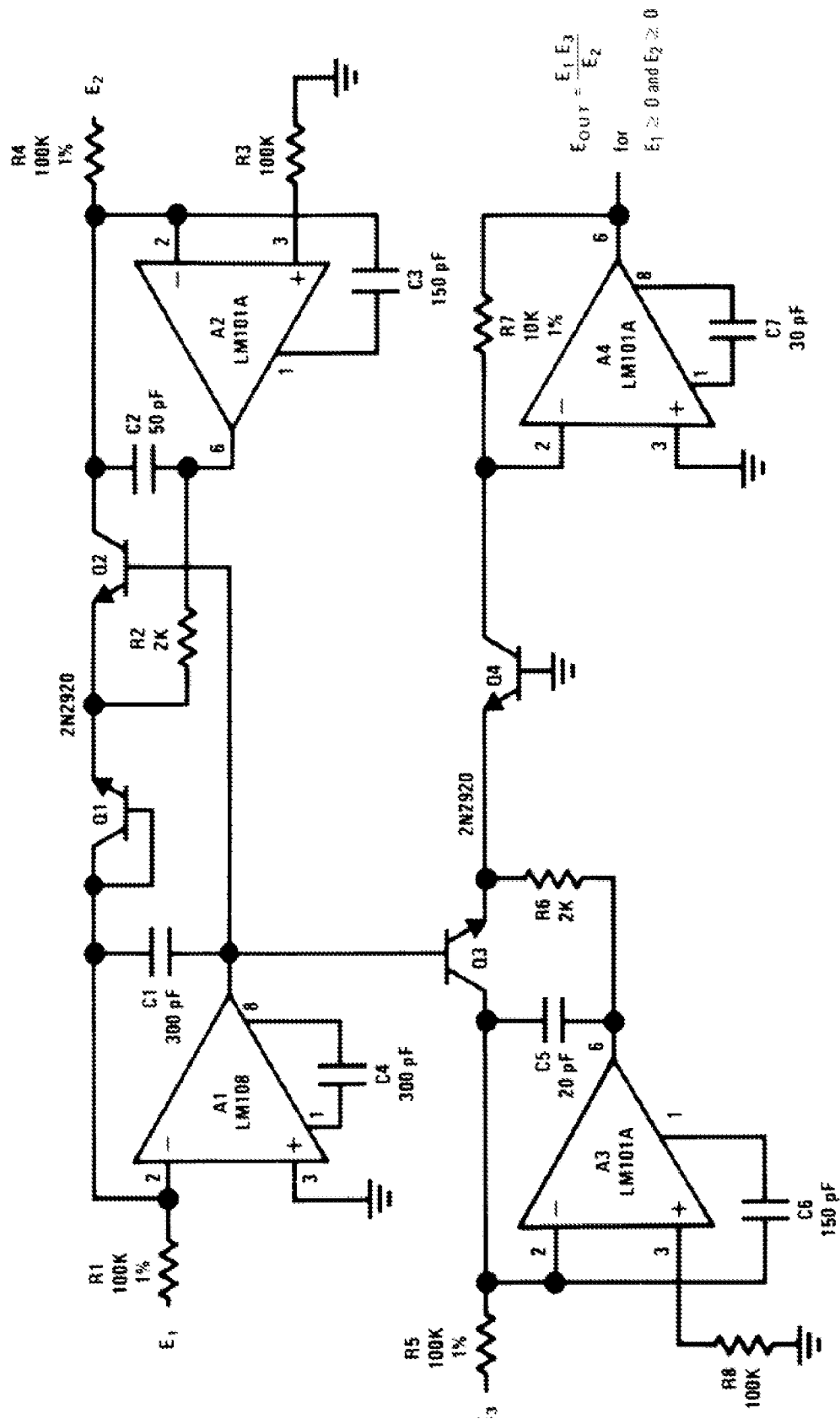


Figure 9

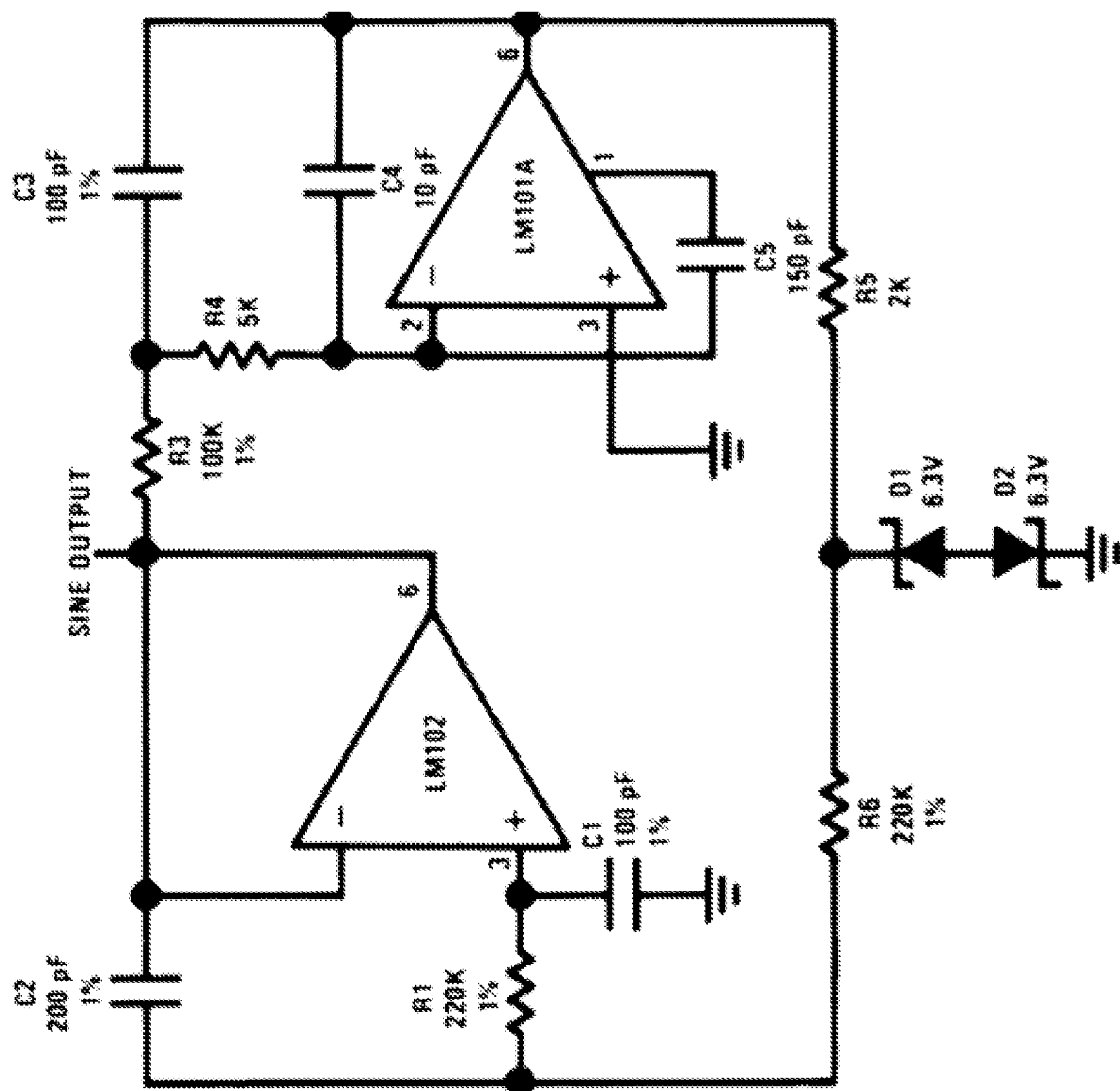


Figure 10A

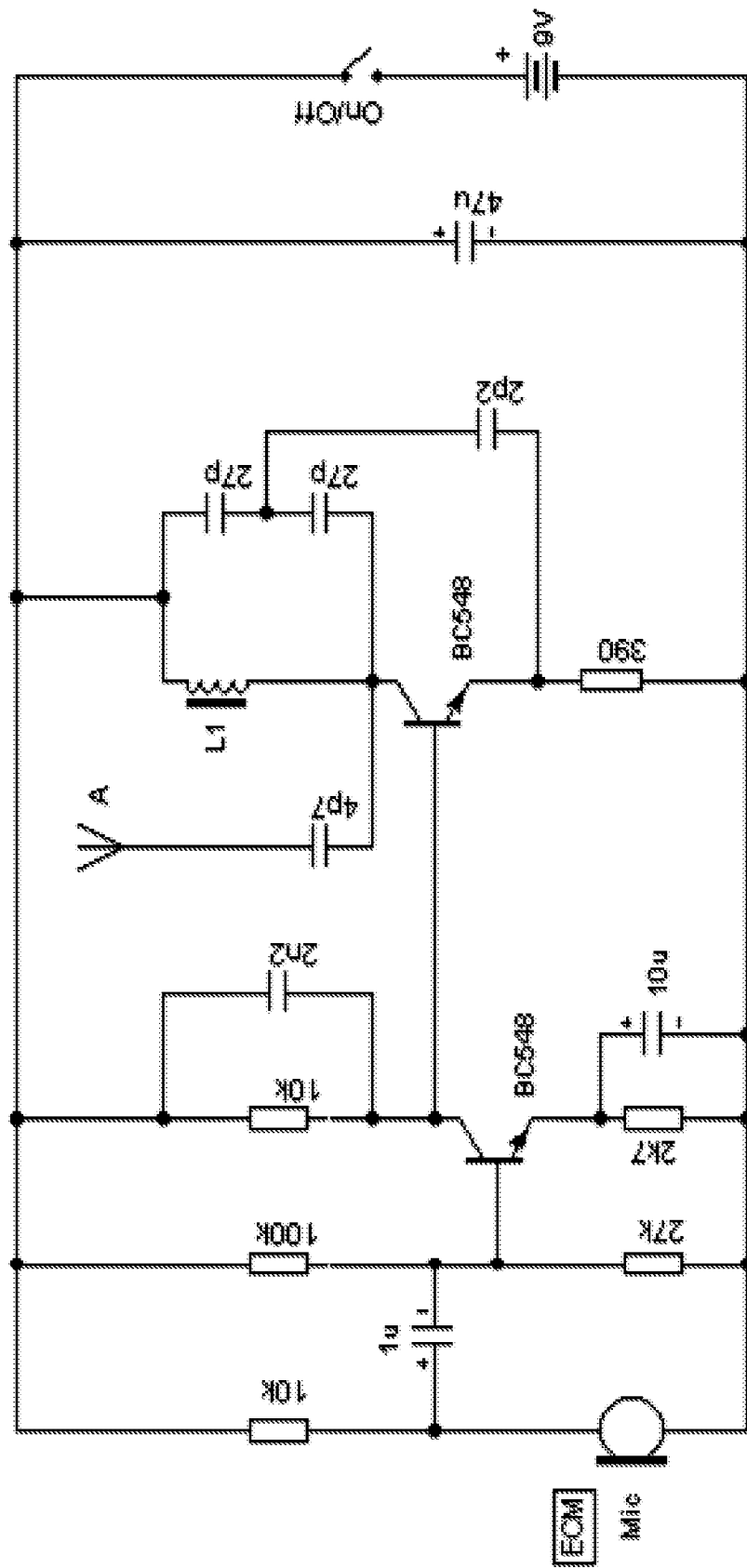


Figure 10B

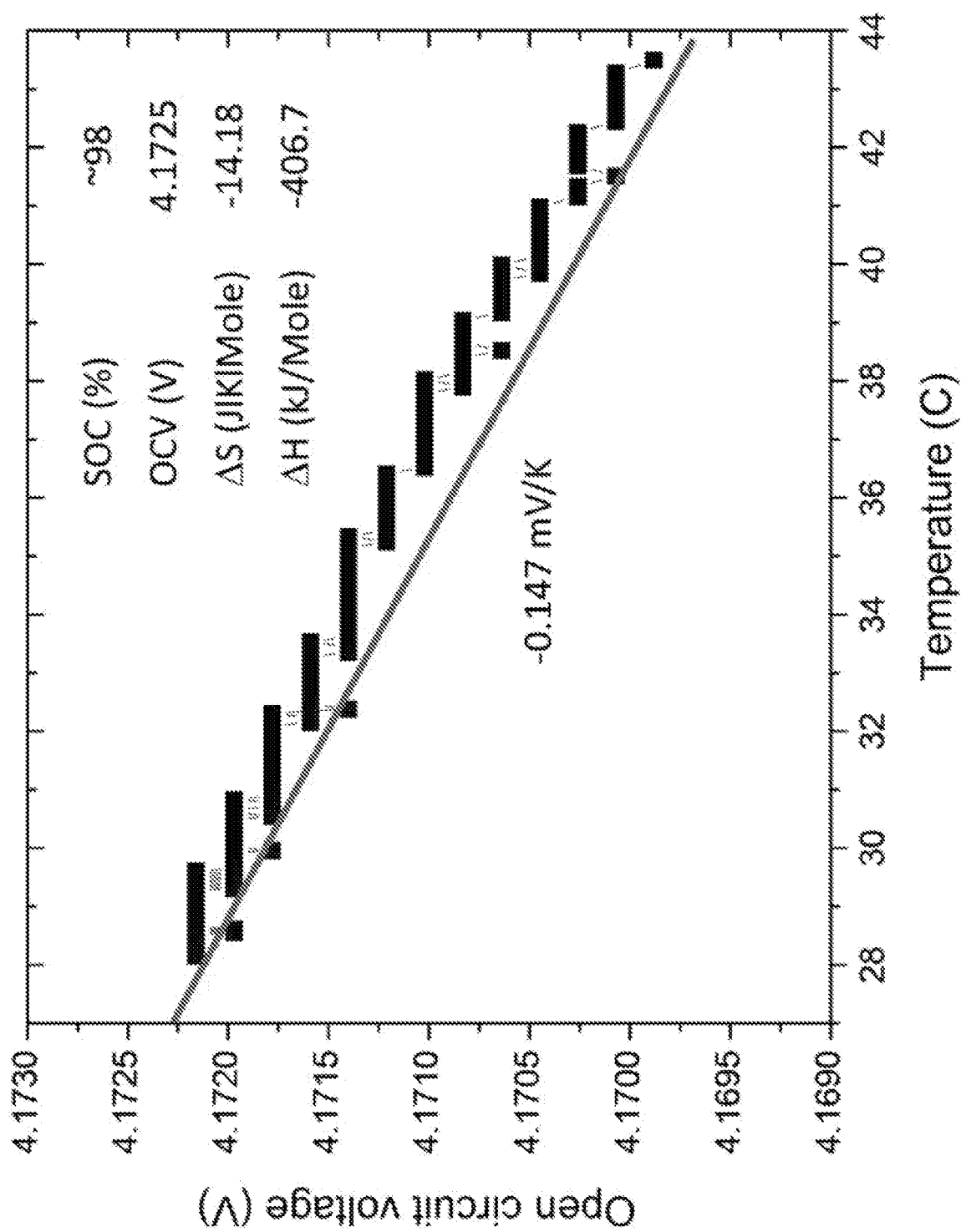


Figure 11

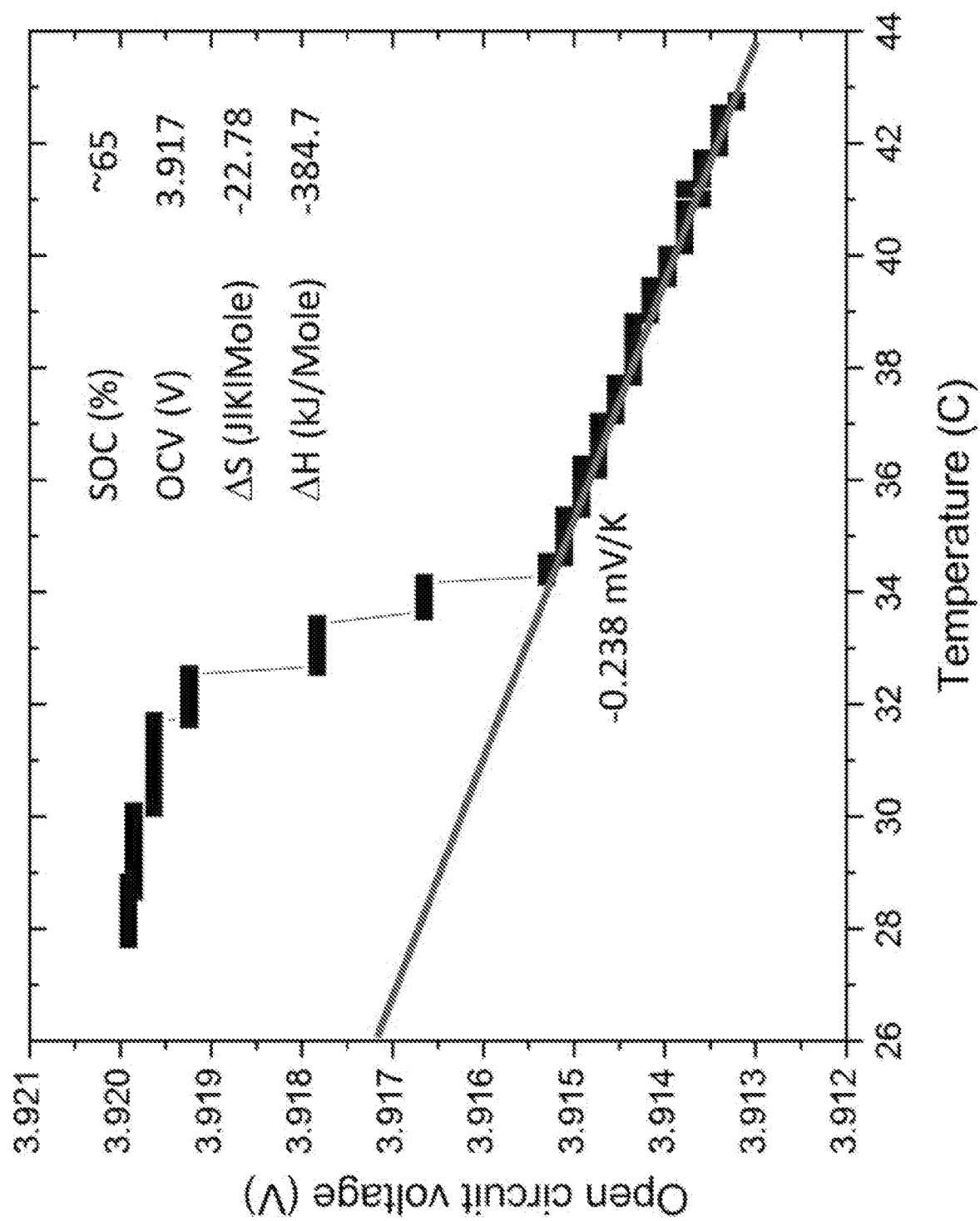


Figure 12

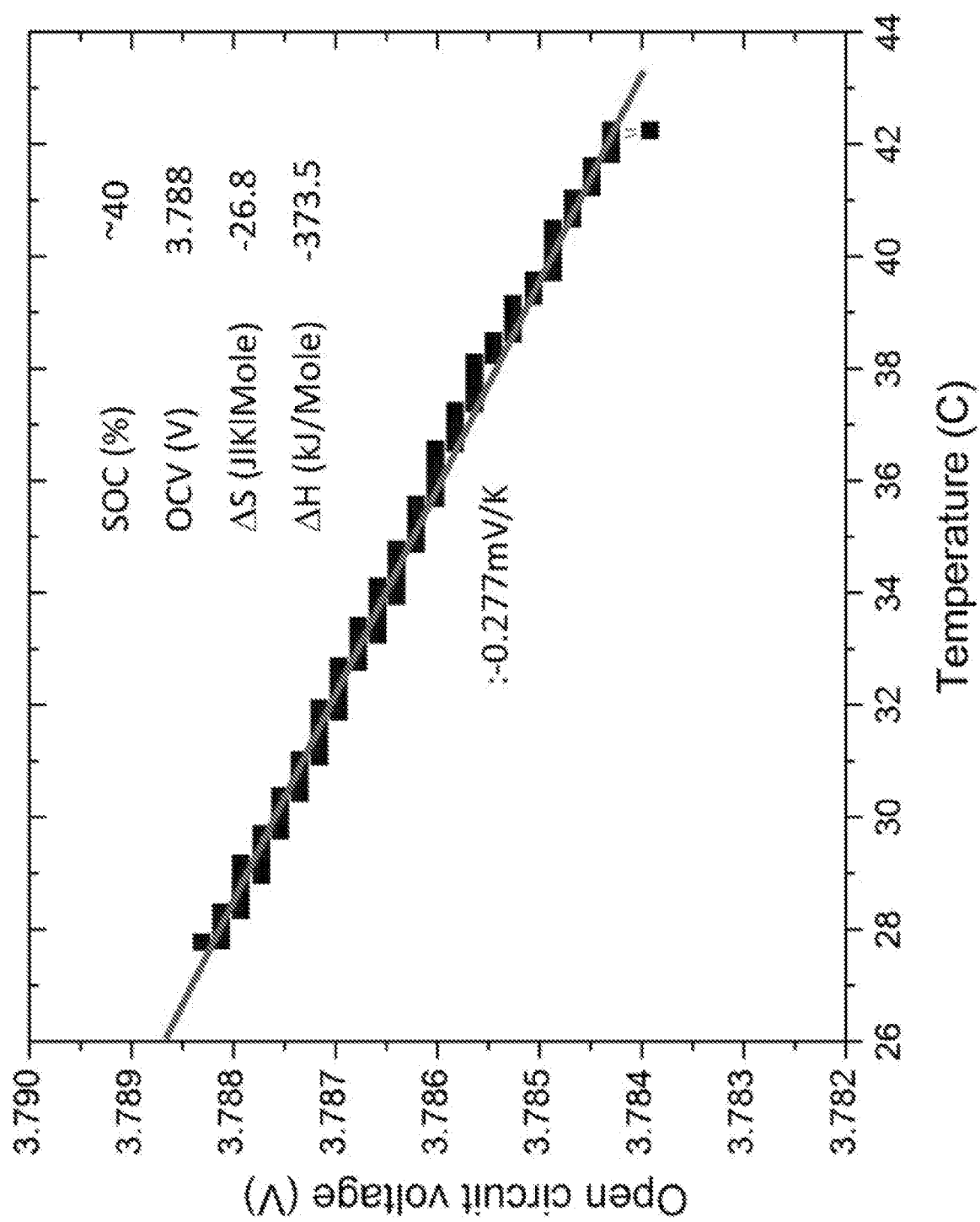


Figure 13

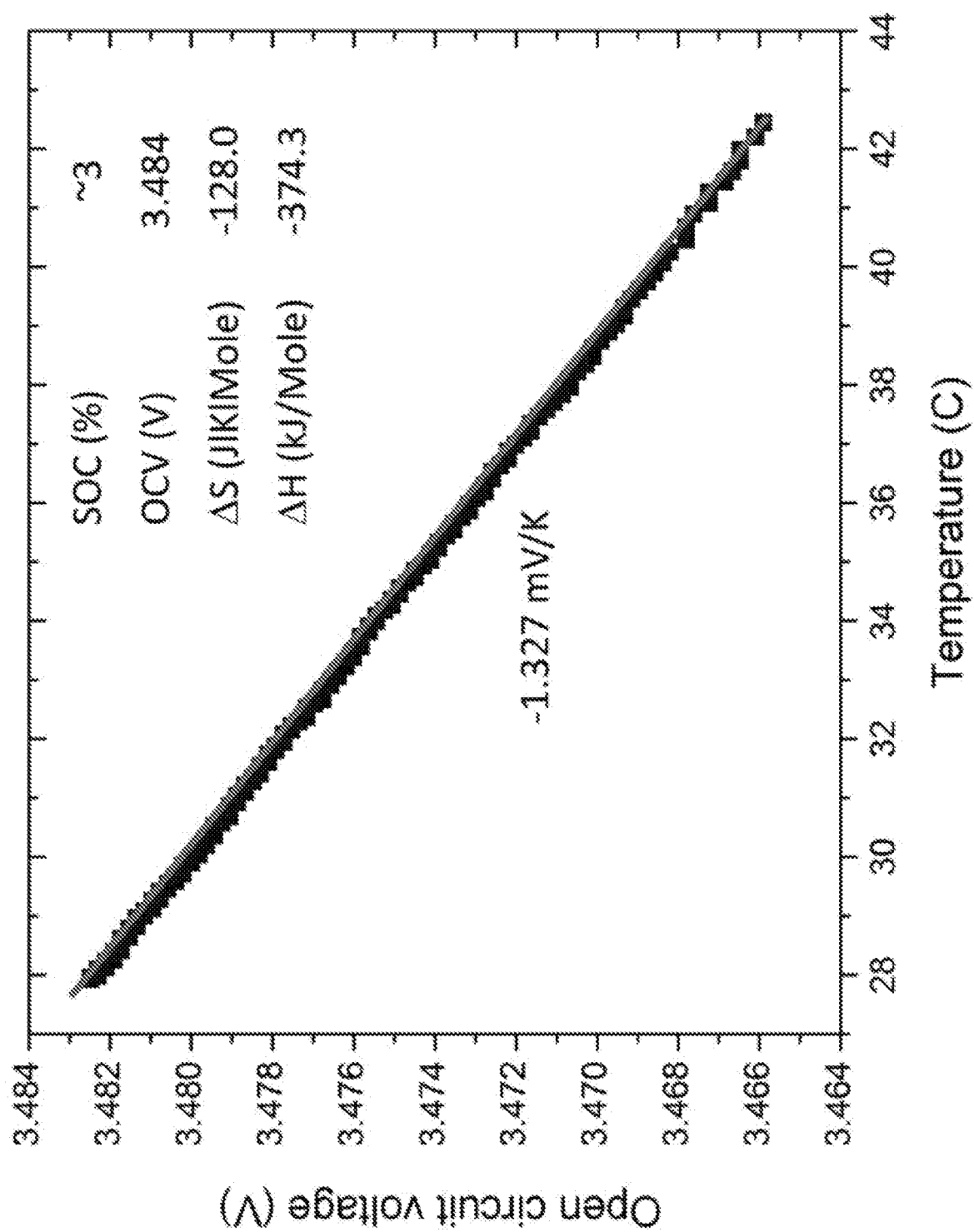


Figure 14

SOC (%)	OCV (V)	ΔS (JK ⁻¹ mole ⁻¹)	ΔH (kJmole ⁻¹)
3	3.484	128	-374.3
40	3.788	-26.8	-373.5
65	3.917	-22.8	-384.7
98	4.173	-14.2	-406.2

Figure 15

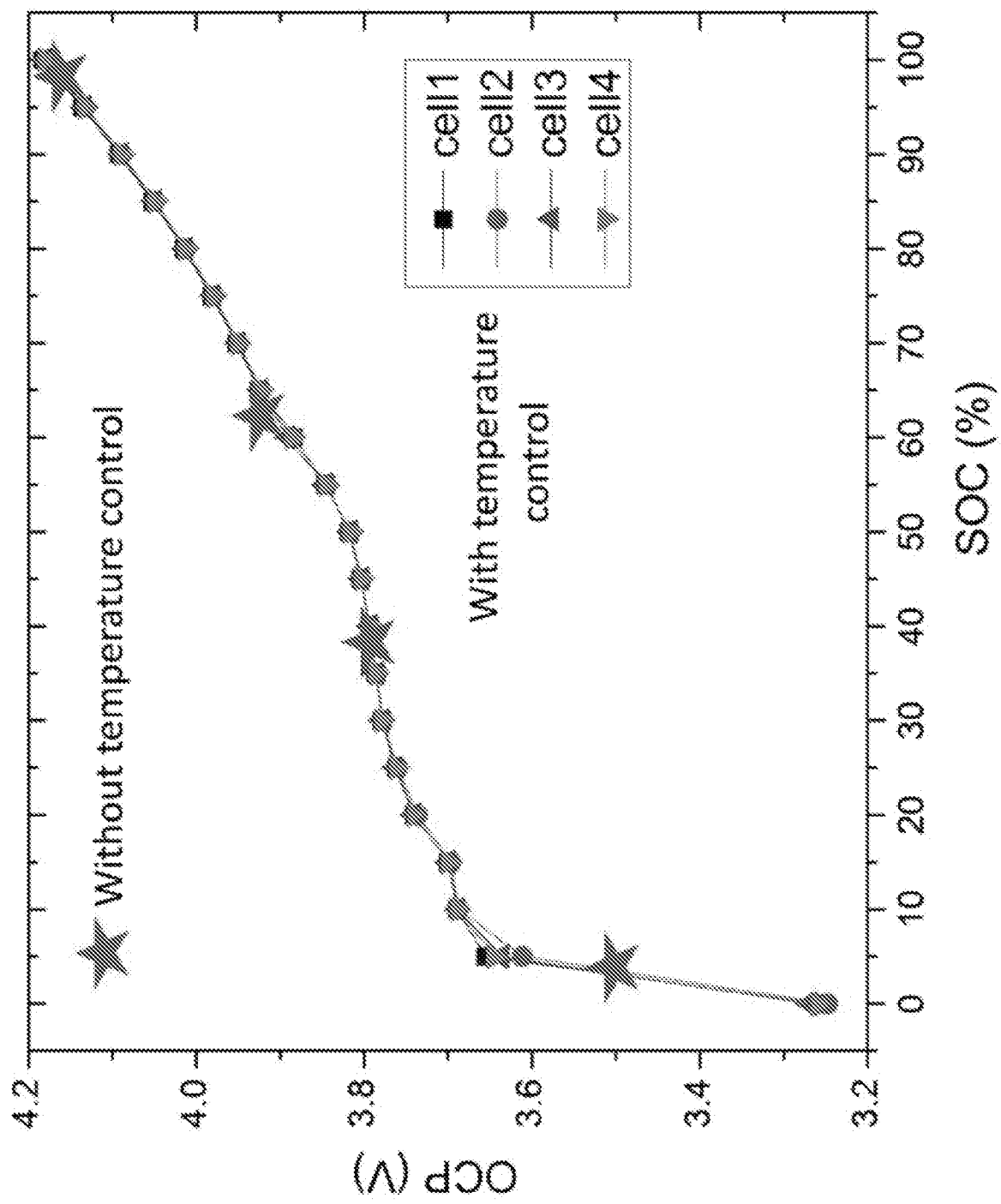


Figure 16

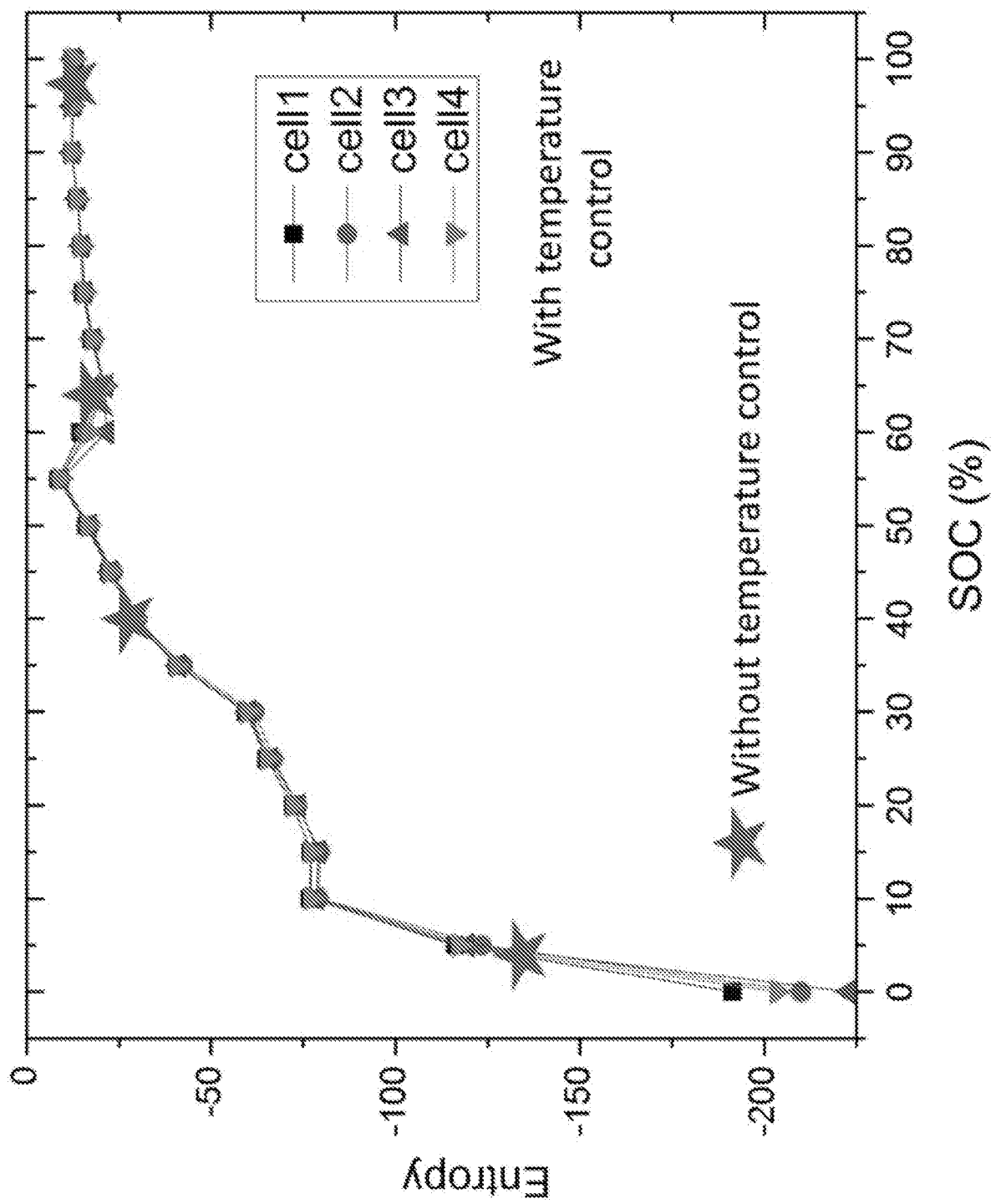


Figure 17

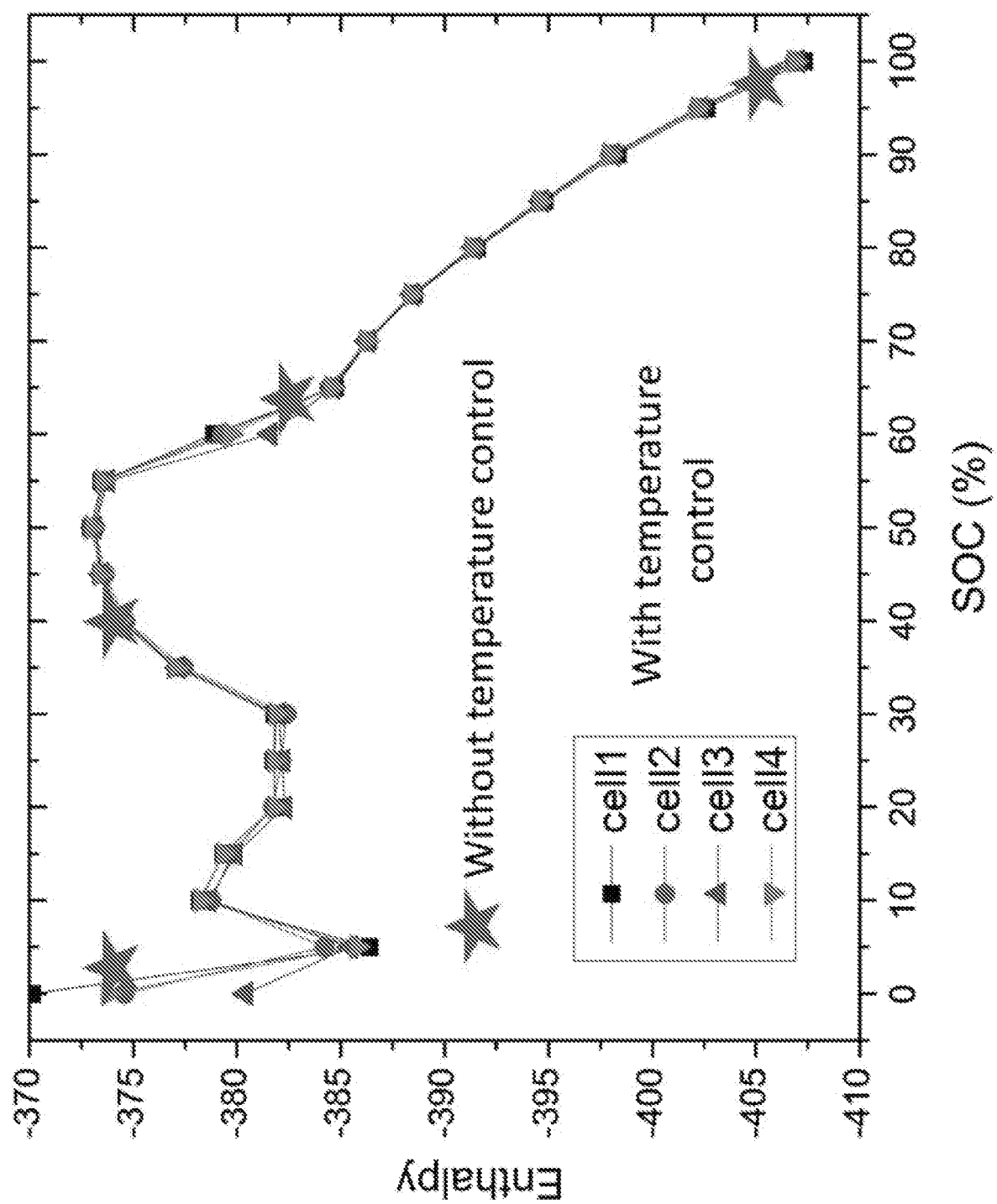


Figure 18

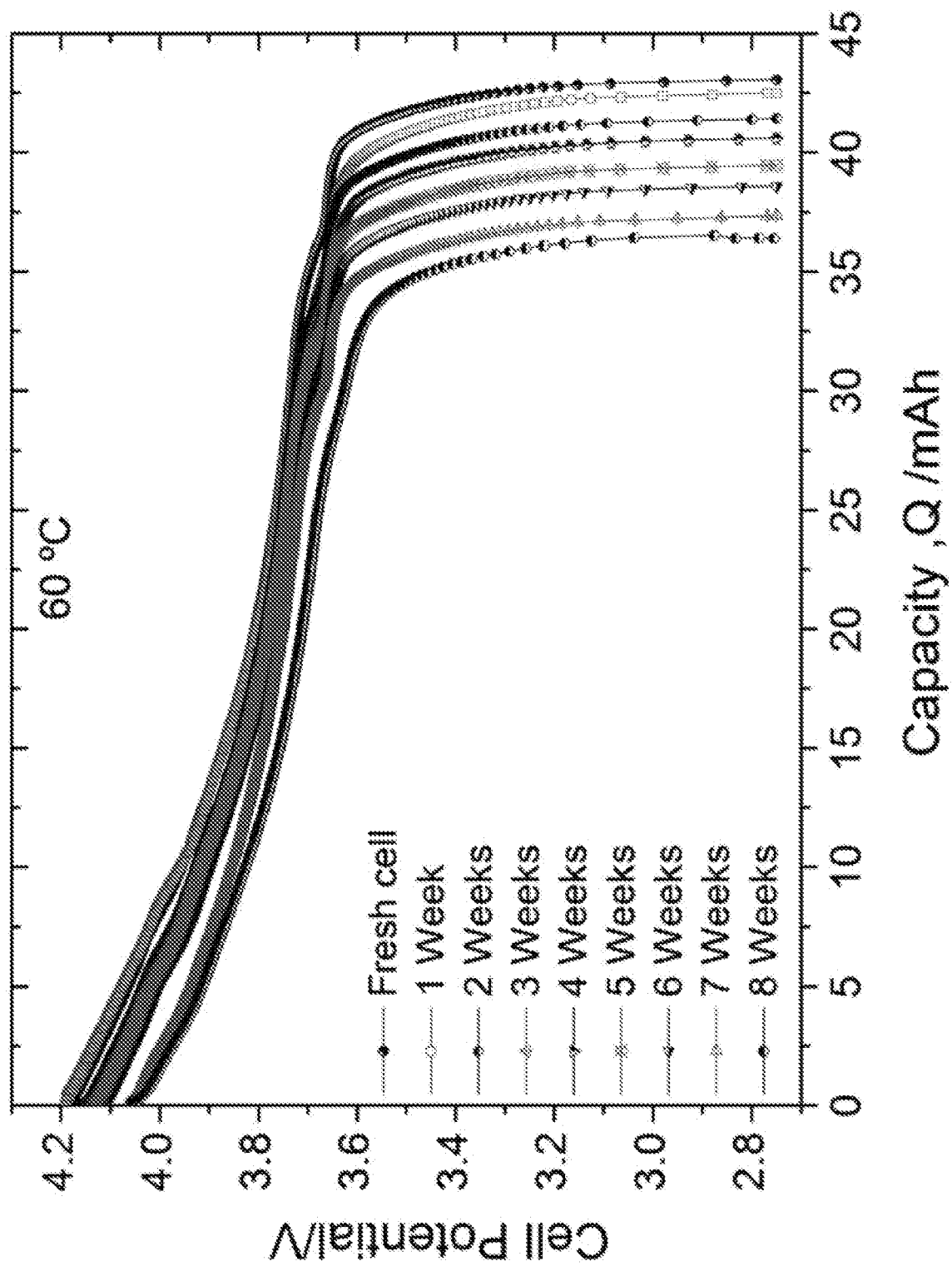


Figure 19

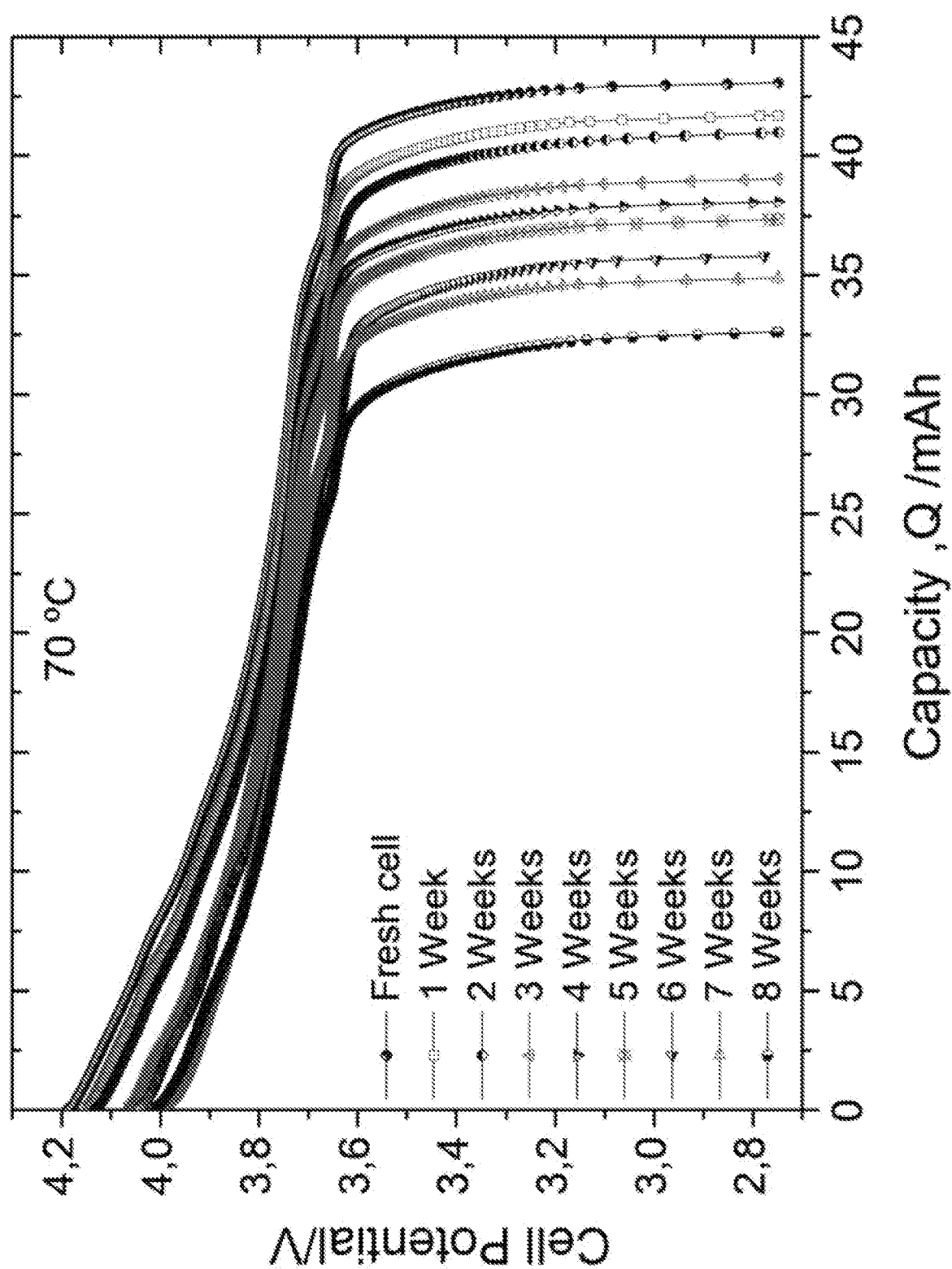


Figure 20

Weeks 60°C	Q_d (mAh)	CL (%)	$\langle E \rangle$ (V)	$\mathcal{E}_d$ (mWh)	SOH (%)
0	43.07	---	3.82	164	100
1	42.95	0.28	3.79	163	99.72
2	41.31	4.09	3.78	156	95.91
3	40.16	6.76	3.77	151	93.24
4	39.98	7.17	3.77	151	92.83
5	39.68	7.87	3.78	150	92.13
6	38.65	10.26	3.76	145	89.74
7	37.66	12.56	3.75	141	87.44
8	36.88	14.37	3.72	137	85.63

Figure 21A

Weeks 70°C	Q_d (mAh)	CL (%)	$\langle E \rangle$ (V)	$\mathcal{E}_d$ (mWh)	SOH (%)
0	43.07	0	3.82	164	100
1	42.06	2.35	3.79	159	97.65
2	40.84	5.18	3.77	154	94.82
3	38.94	9.59	3.76	146	90.41
4	38.00	11.77	3.76	142	88.23
5	36.97	14.16	3.76	139	85.84
6	35.77	16.95	3.75	134	83.05
7	34.93	18.90	3.74	131	81.1
8	32.65	24.19	3.73	122	75.81

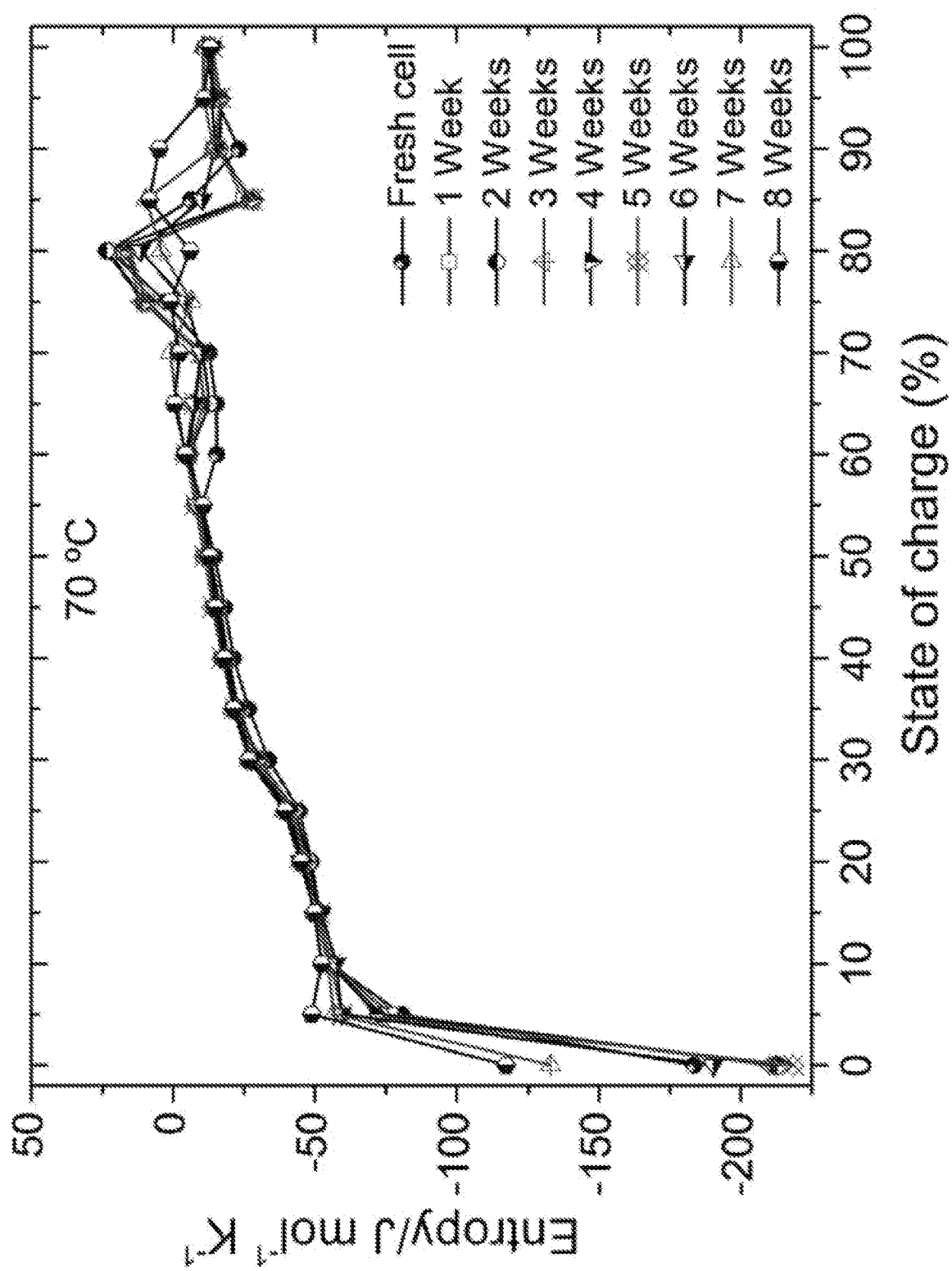


Figure 22

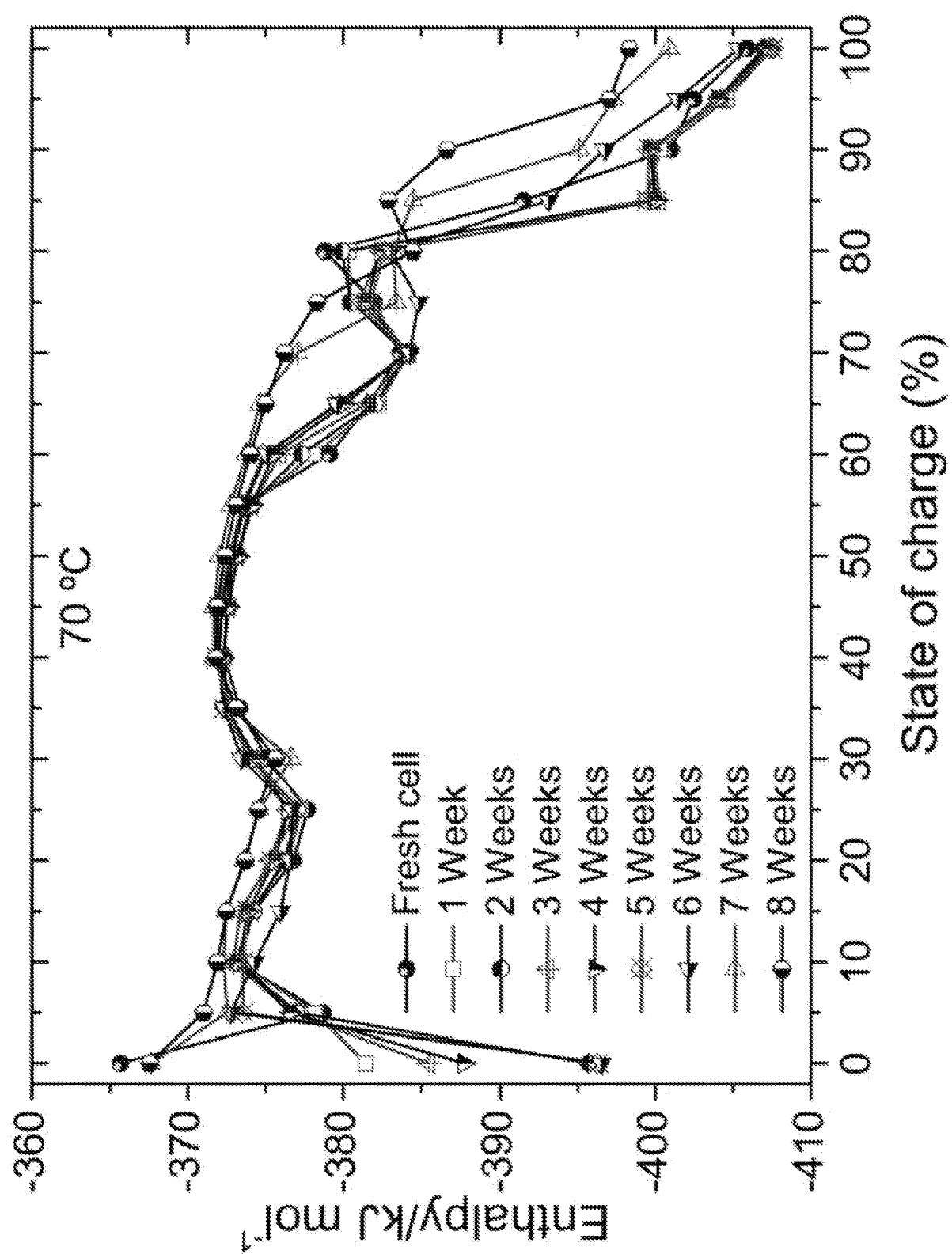


Figure 23

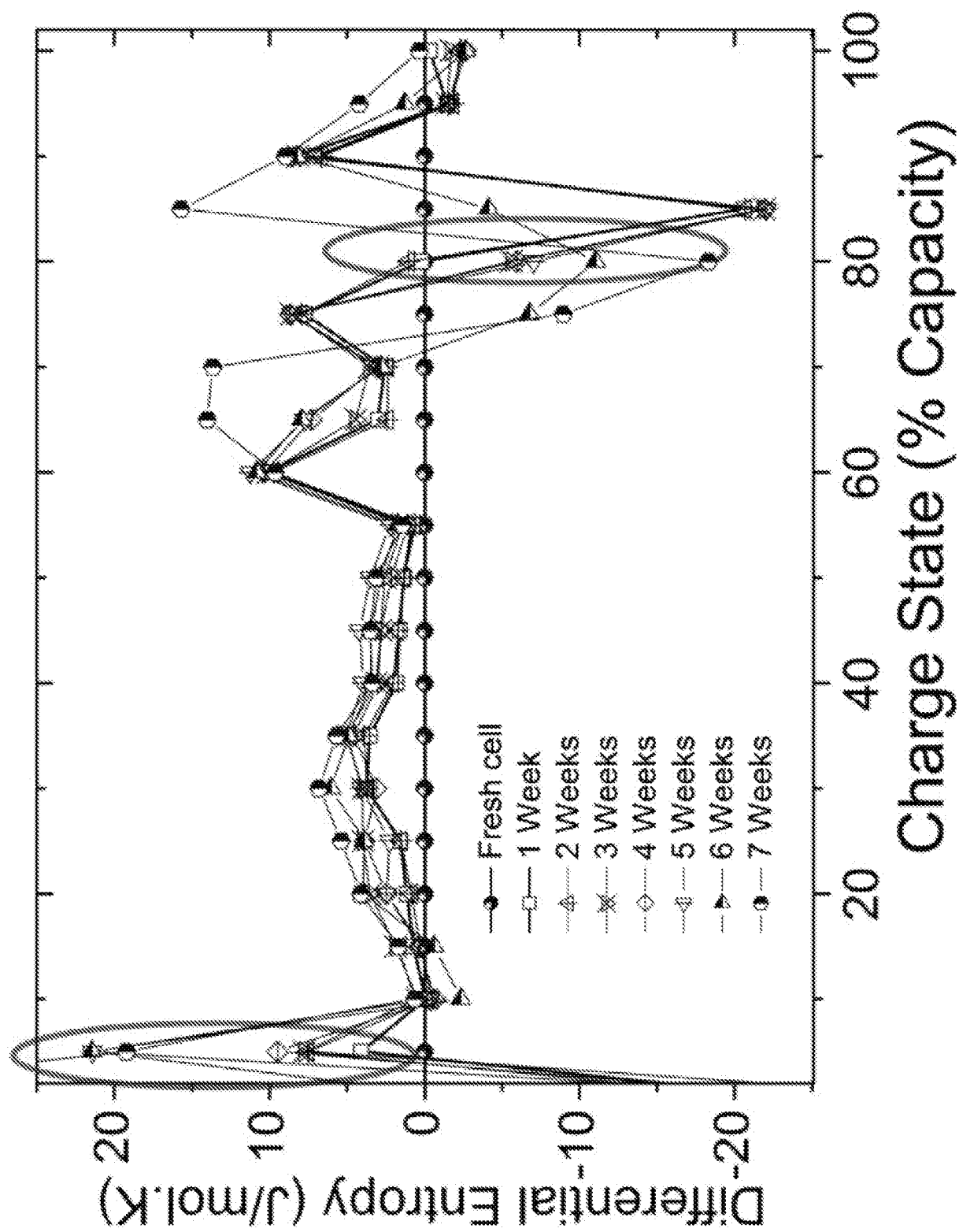


Figure 24

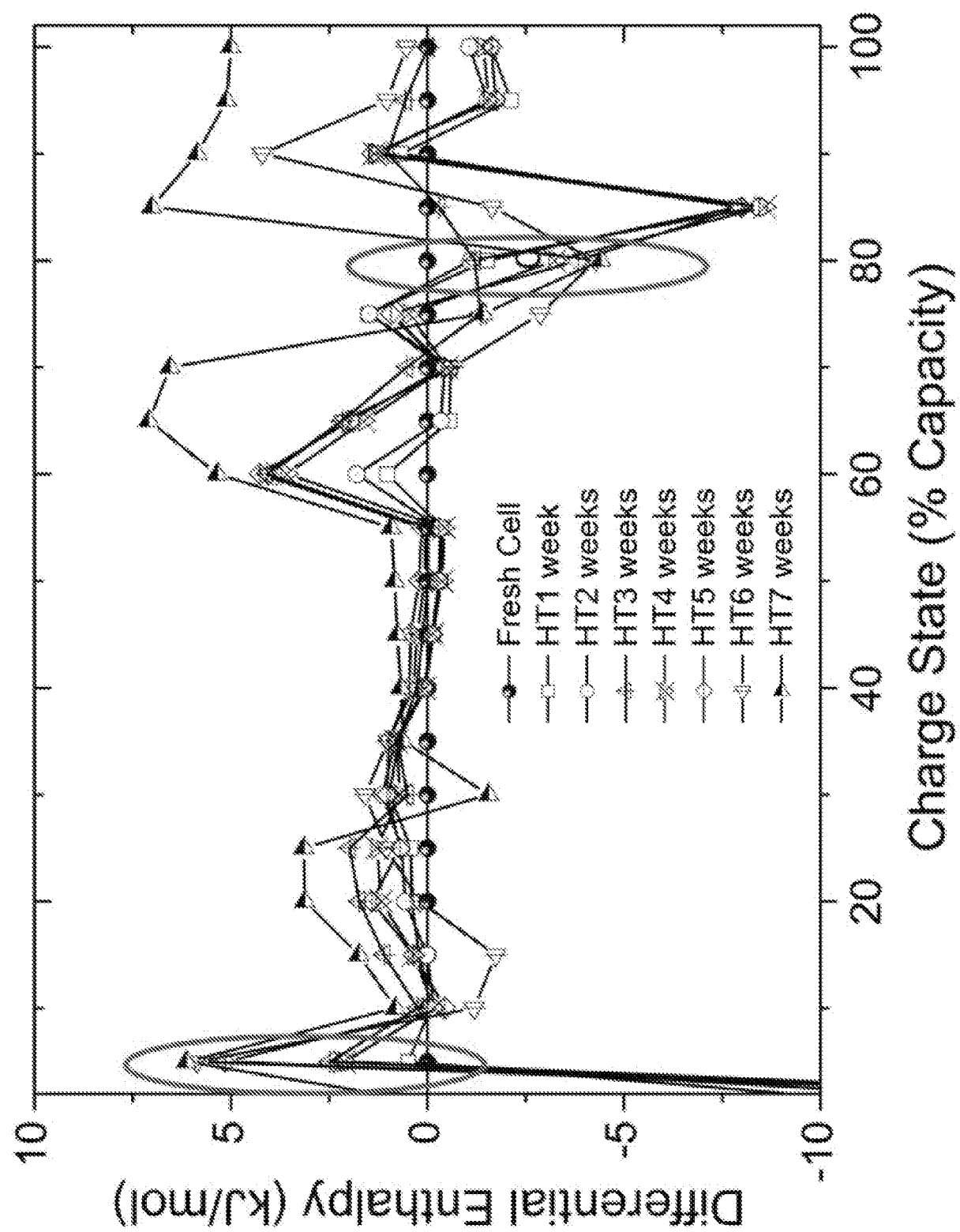


Figure 25

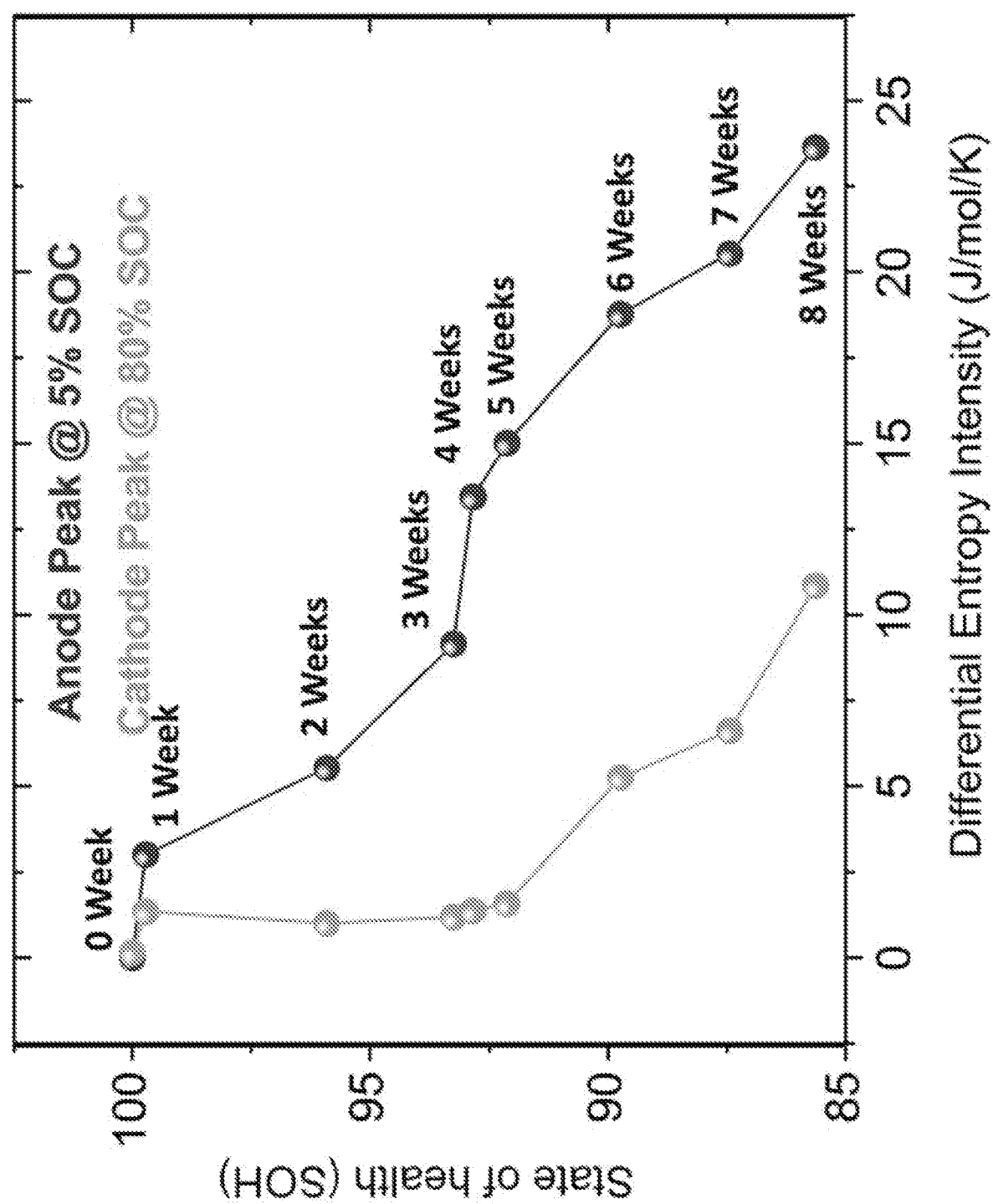


Figure 26

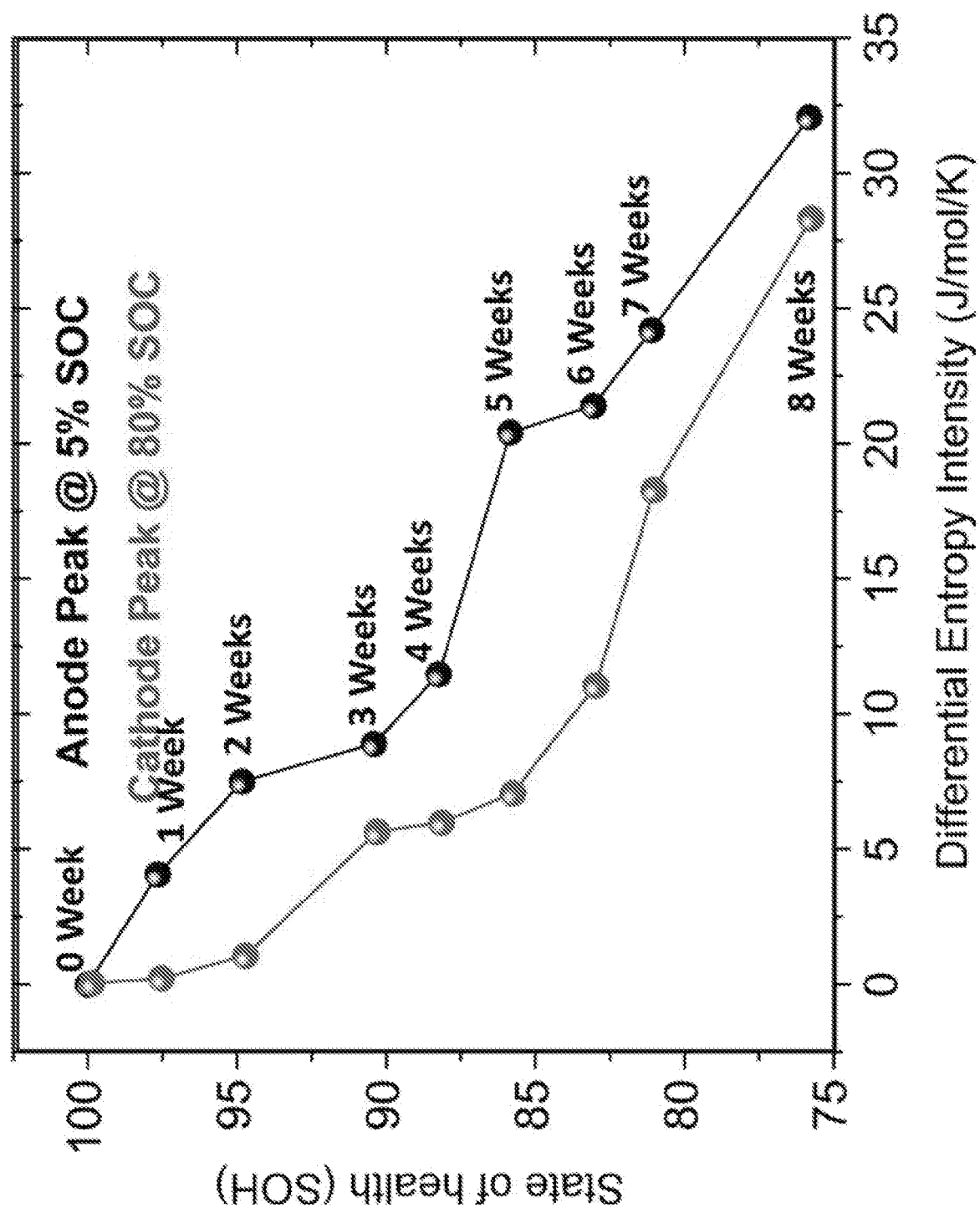


Figure 27

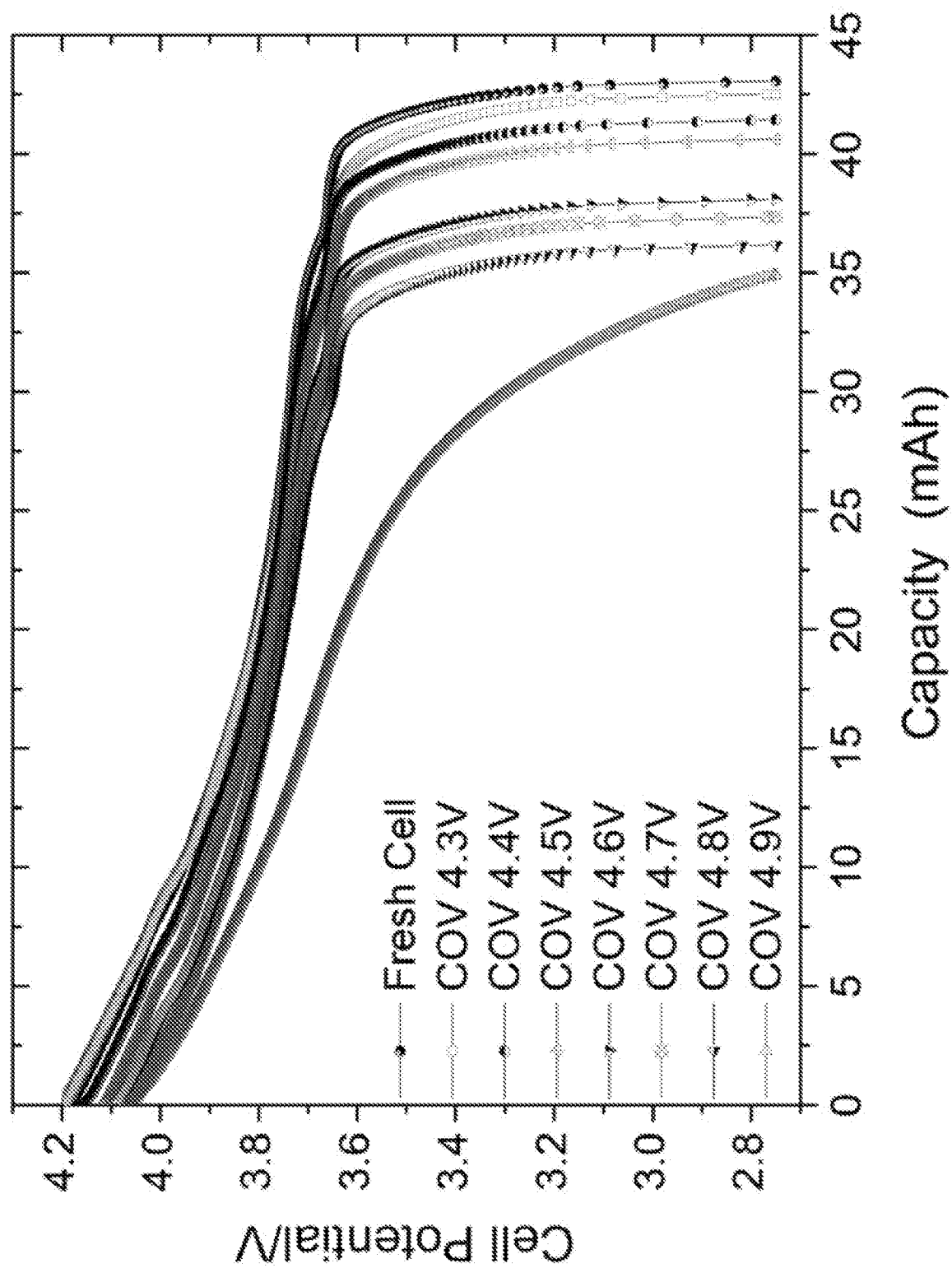


Figure 28

COV (V)	(mAh)	(%)	<> (V)	ε_d (mWh)	SOH (%)
4.2	43.07	0	3.82	164	100
4.3	42.51	1.30	3.81	162	98.7
4.4	41.44	3.78	3.80	157	96.13
4.5	40.62	5.69	3.78	153	94.32
4.6	38.09	11.56	3.77	143	88.44
4.7	37.35	13.28	3.76	140	82.72
4.8	36.16	16.04	3.77	136	83.96
4.9	34.90	18.97	3.62	126	81.03

Figure 29

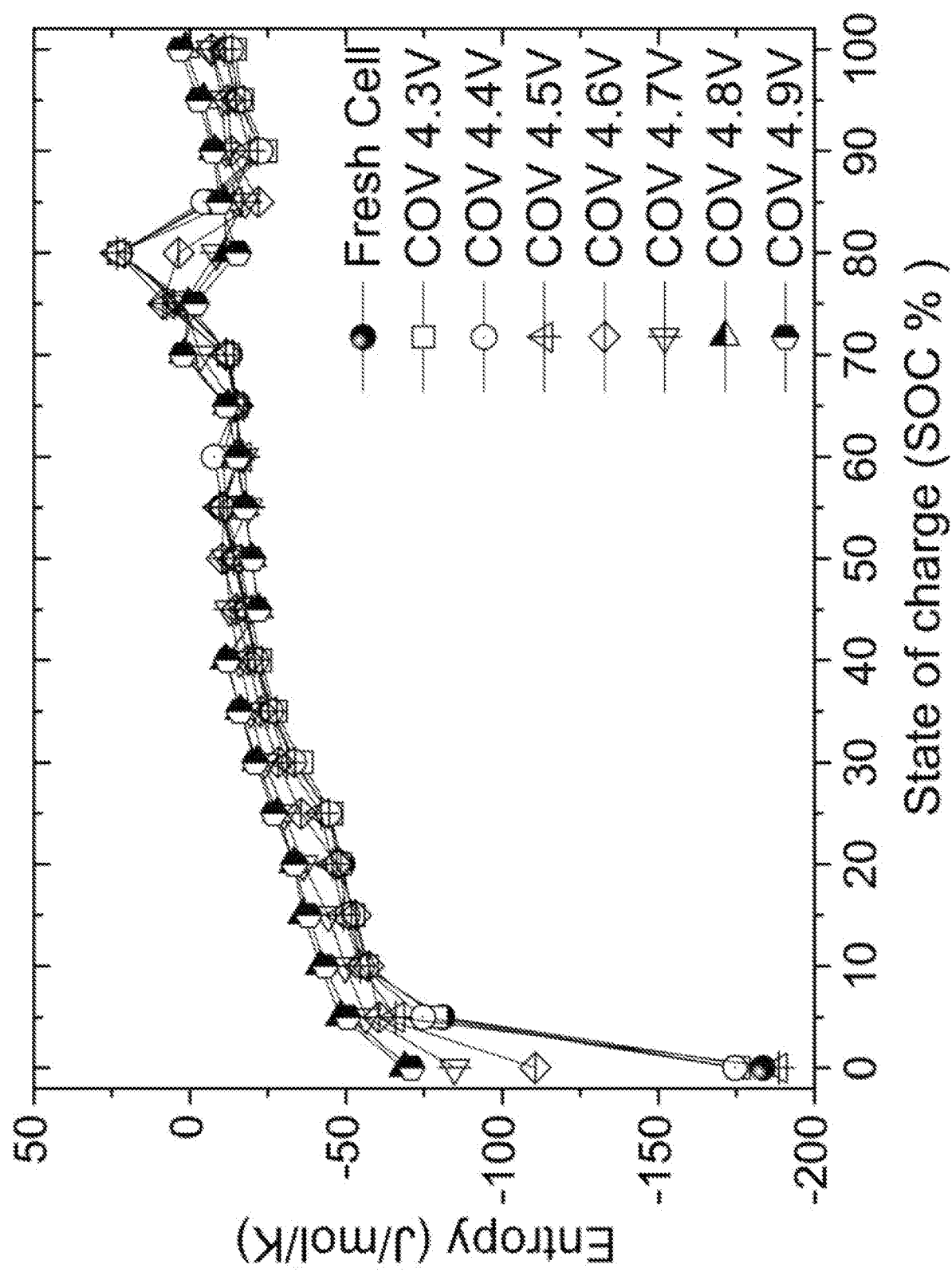


Figure 30

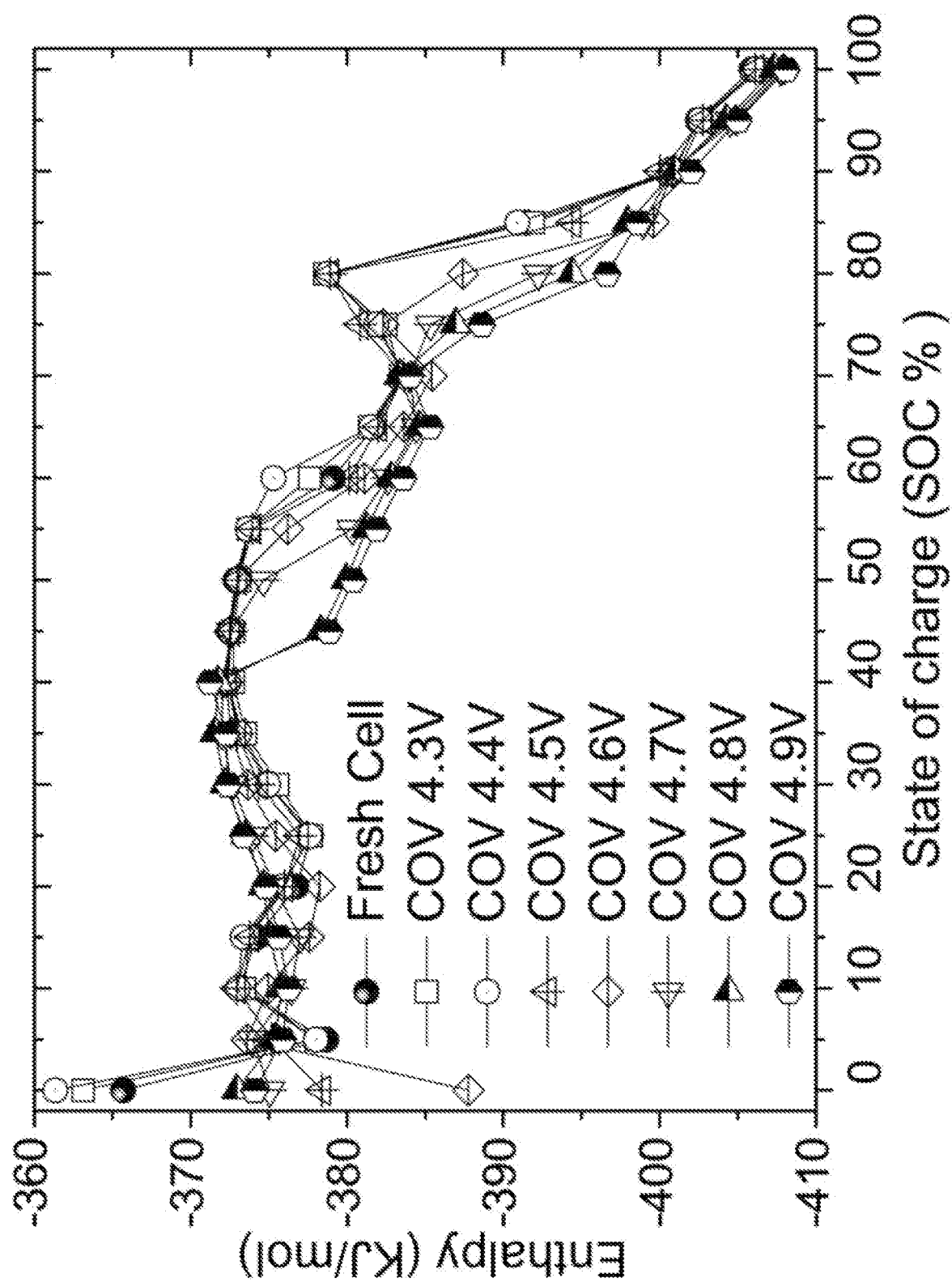


Figure 31

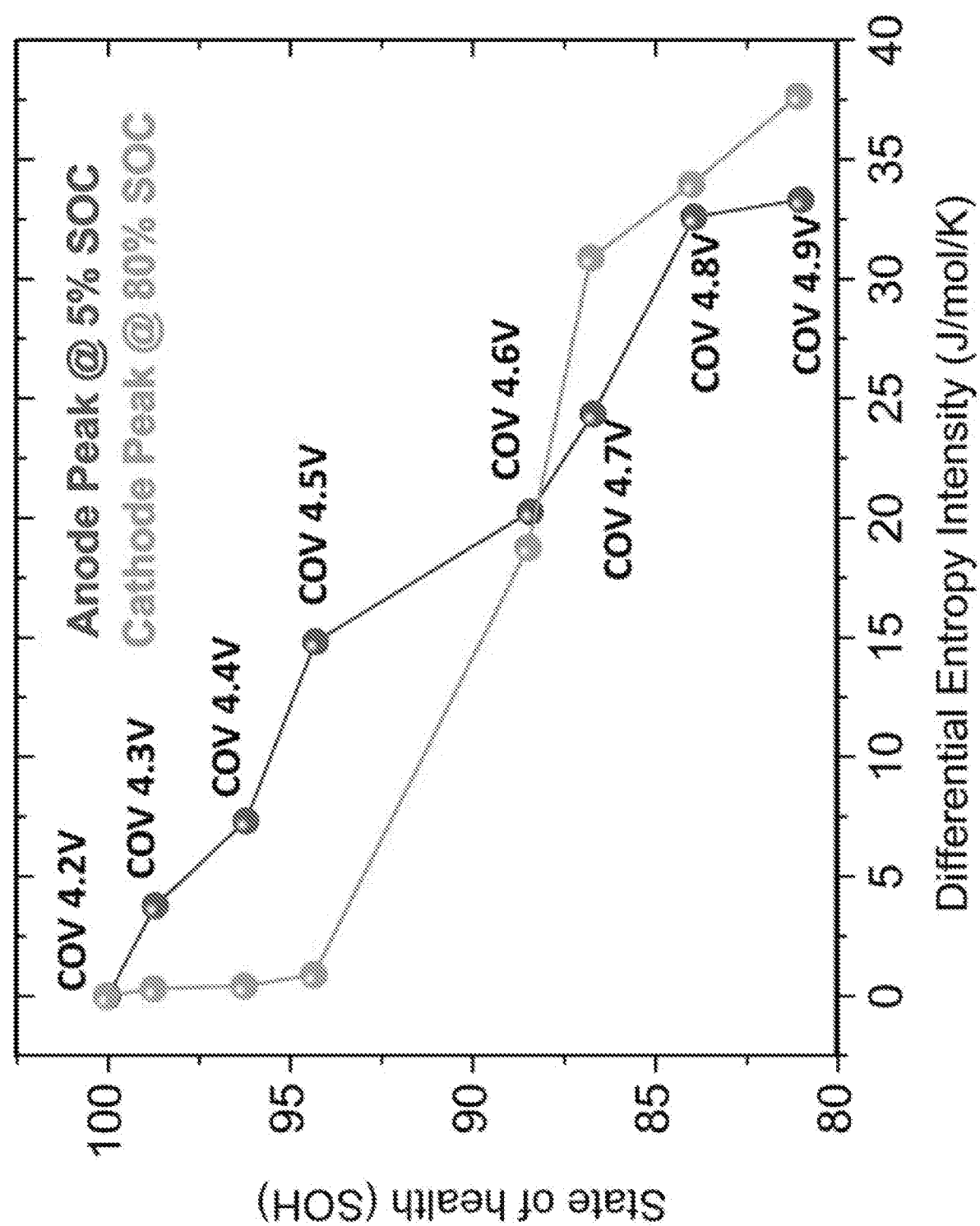


Figure 32

Cycle number	(mAh)	(%)	<> (V)	ε_d (mWh)	SOH (%)
1	36.58	--	3.72	136	100
100	34.28	6.3	3.73	128	93.7
200	32.92	10	3.72	122	90
300	31.78	13.1	3.68	117	86.9
400	30.75	15.9	3.67	113	84.1
500	29.11	20.4	3.65	106	79.6
600	28.10	23.2	3.65	103	76.8
700	25.99	28.9	3.65	95	71.1
800	25.19	31.1	3.58	90	68.9
900	24.40	33.3	3.56	87	66.7
1000	23.55	35.62	3.54	83	64.38

Figure 33

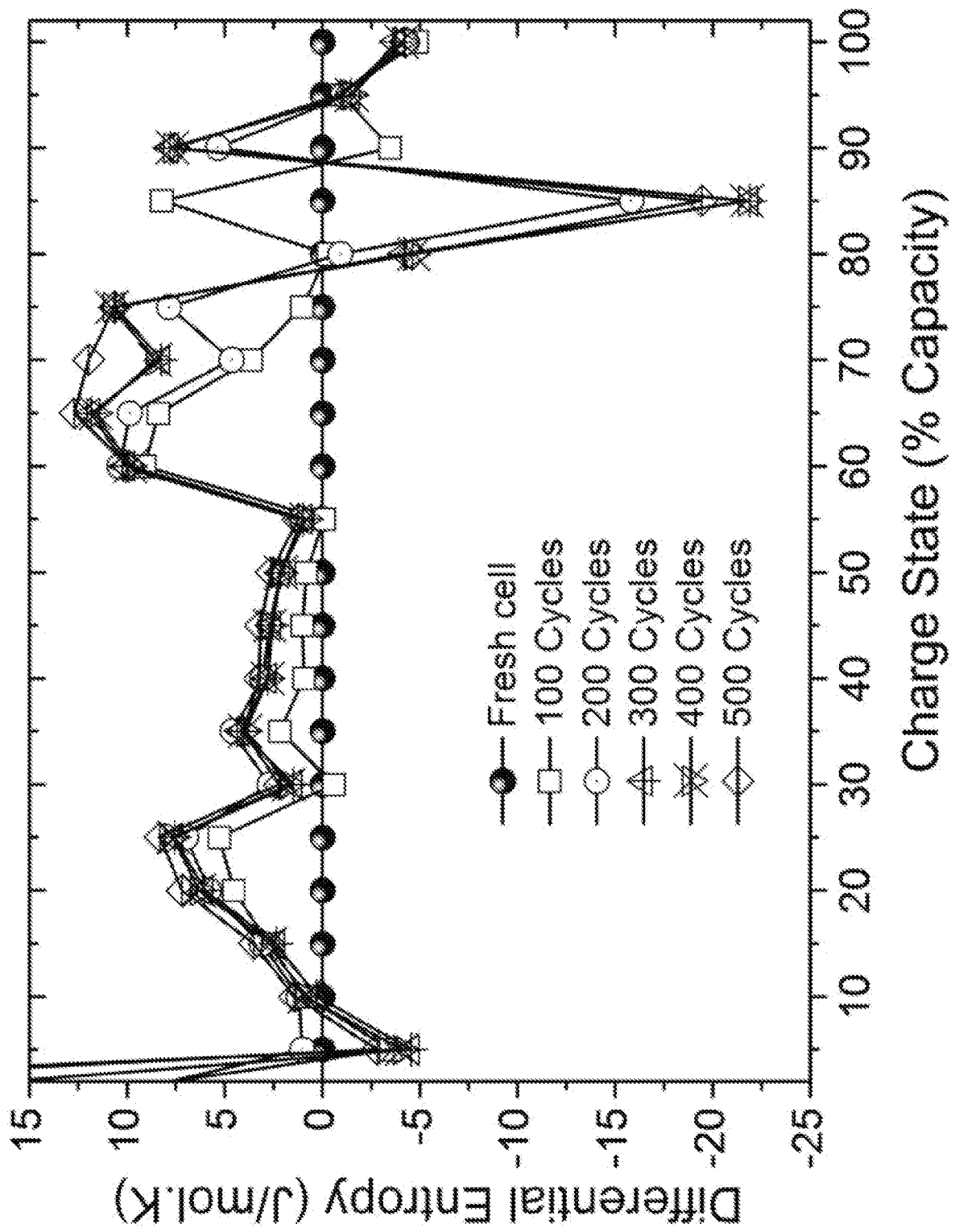


Figure 34

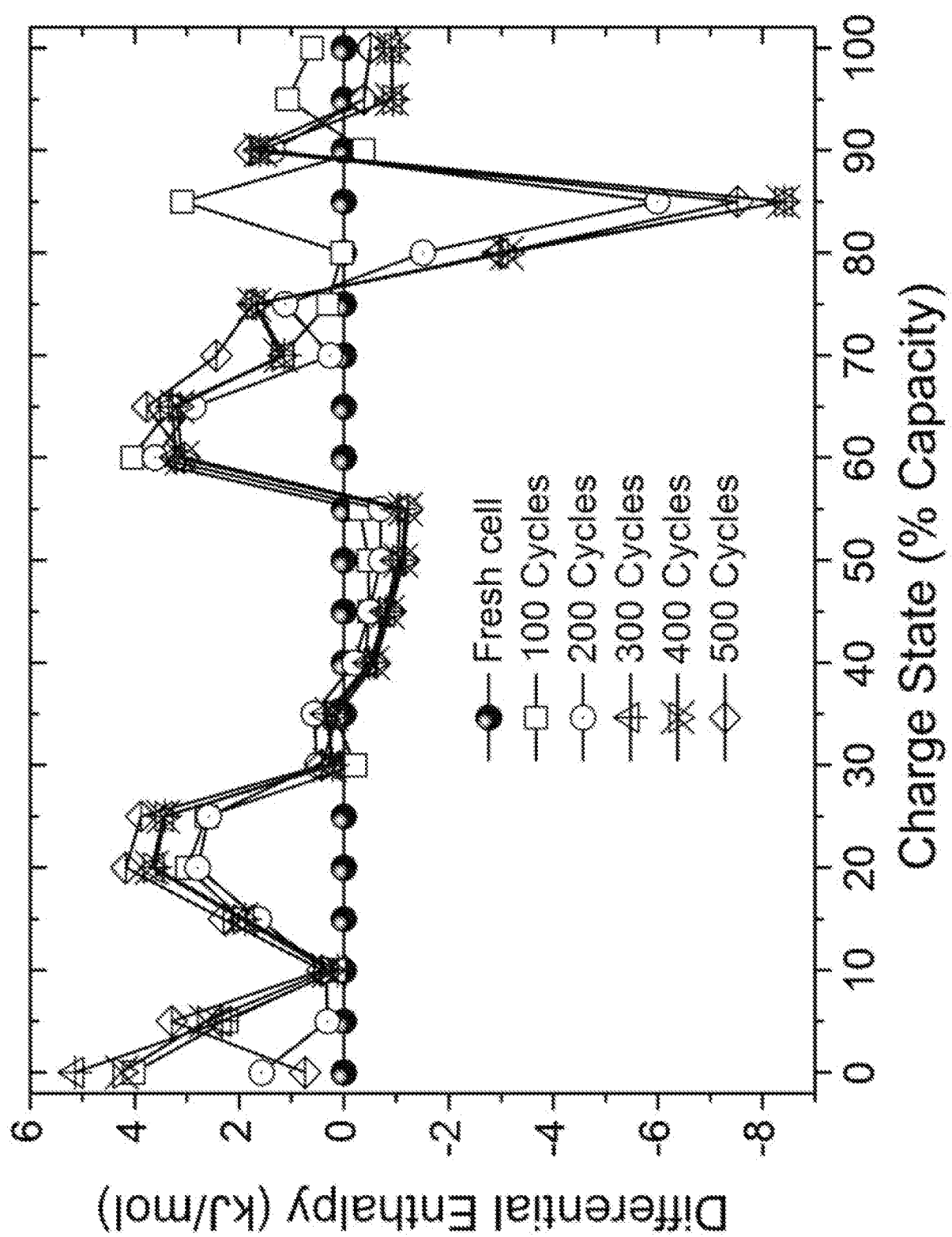
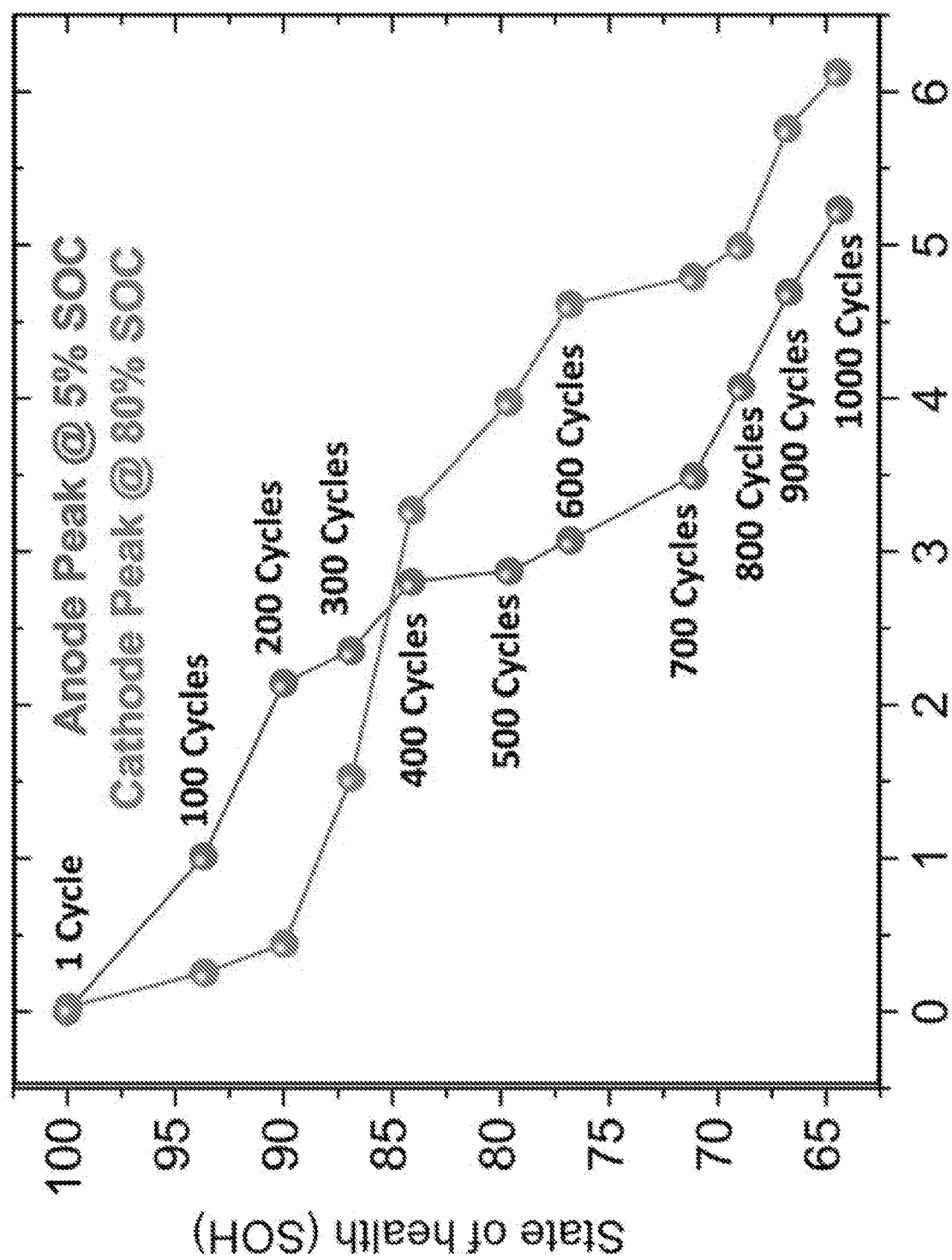


Figure 35



Differential Entropy Intensity (J/mol/K)

Figure 36

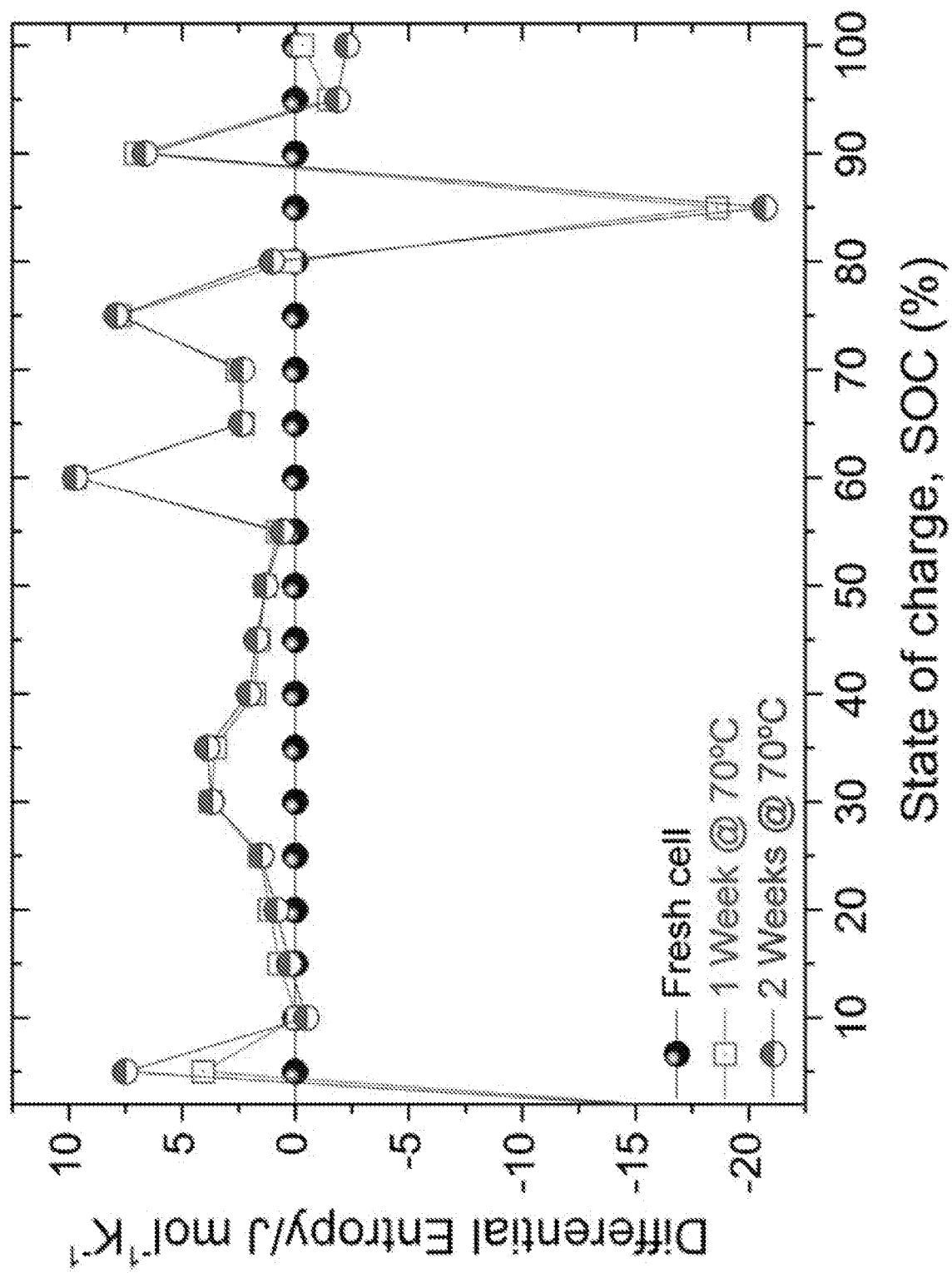


Figure 37

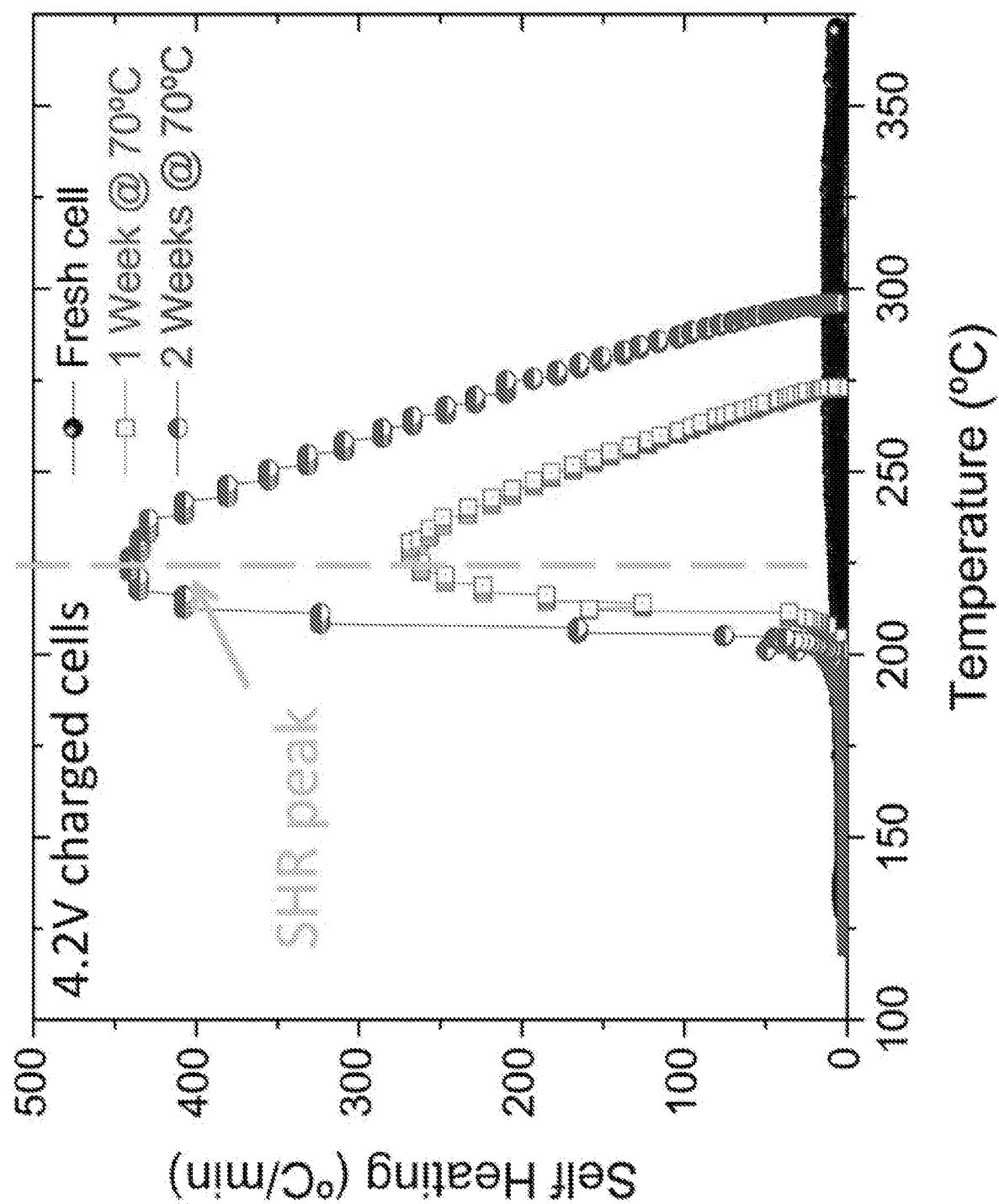
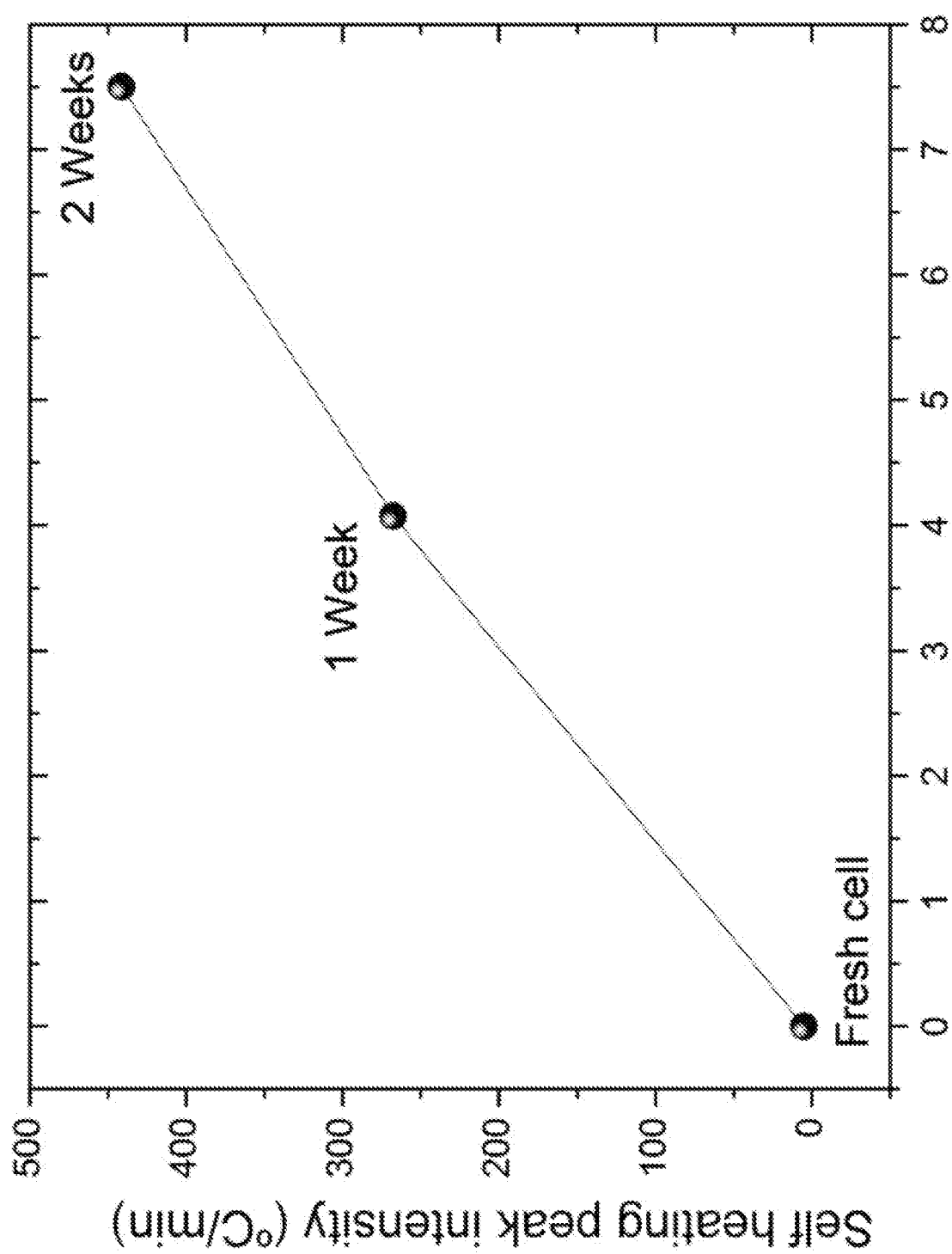


Figure 38



Differential Entropy peak Intensity @ 5% SOC

Figure 39

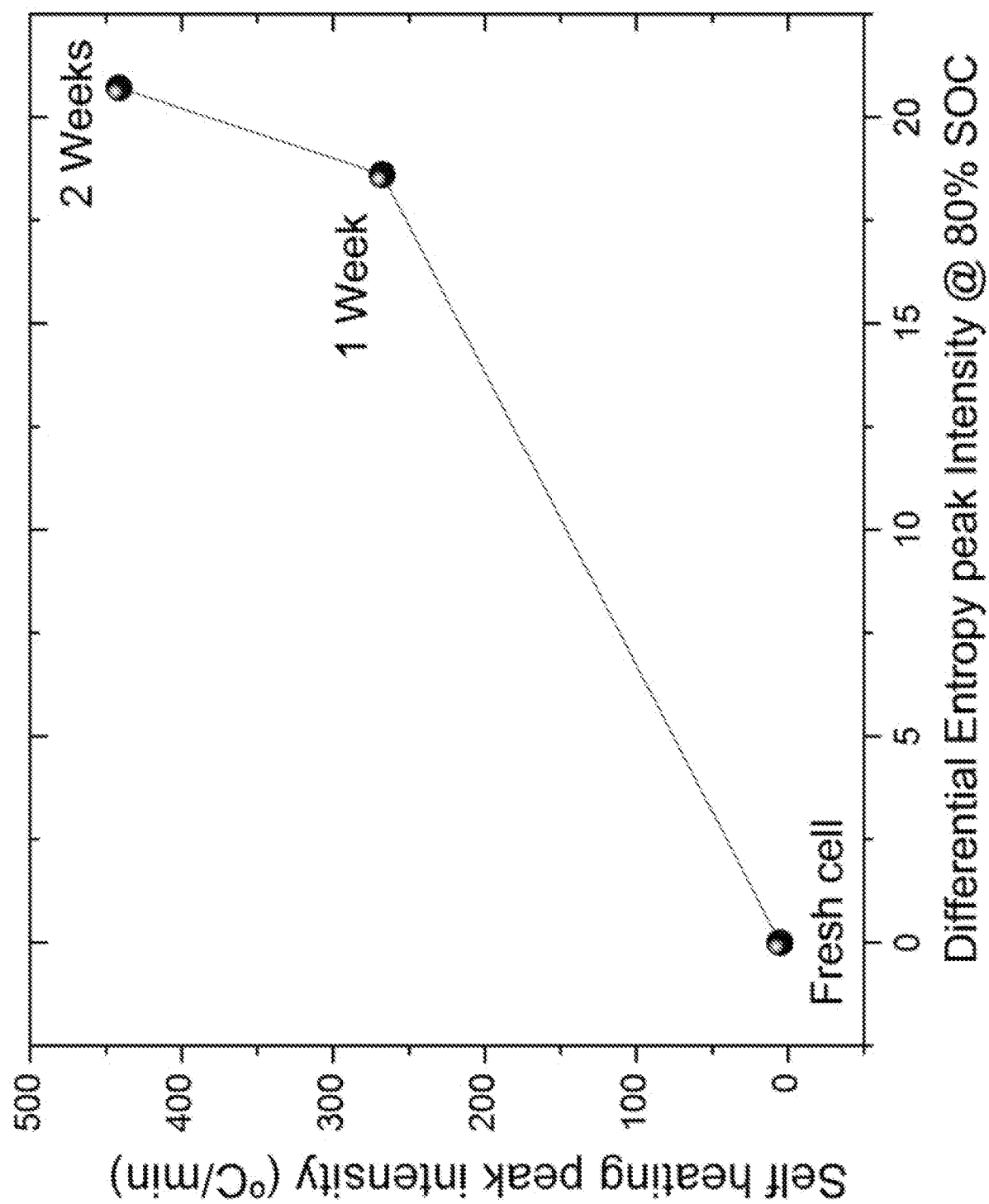


Figure 40