Technical Information and Experimental Test Results for Turnigy Graphene 5Ah 65C

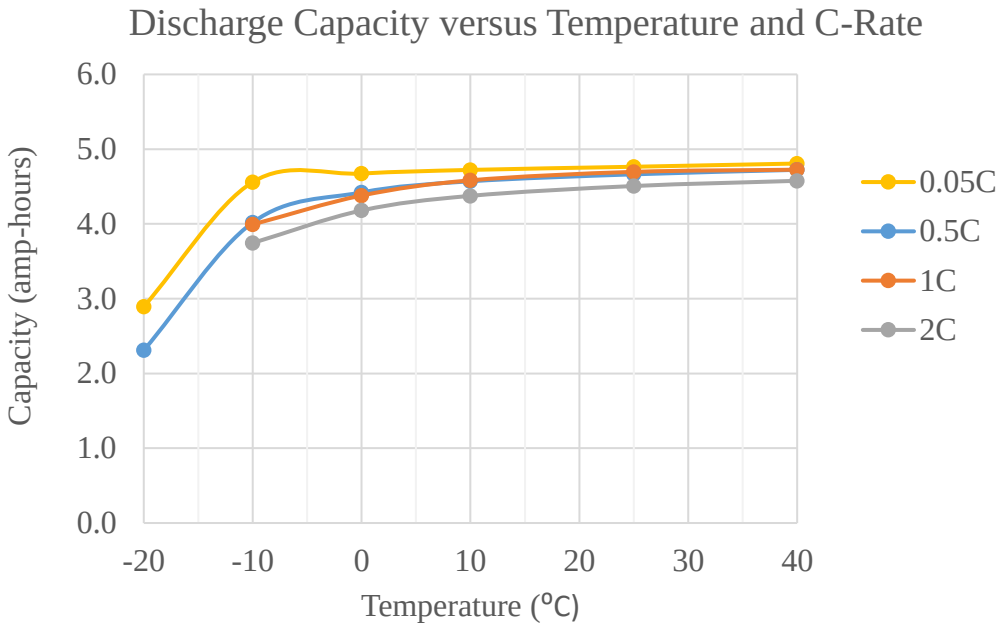
Testing performed at McMaster University, Hamilton, Ontario, Canada

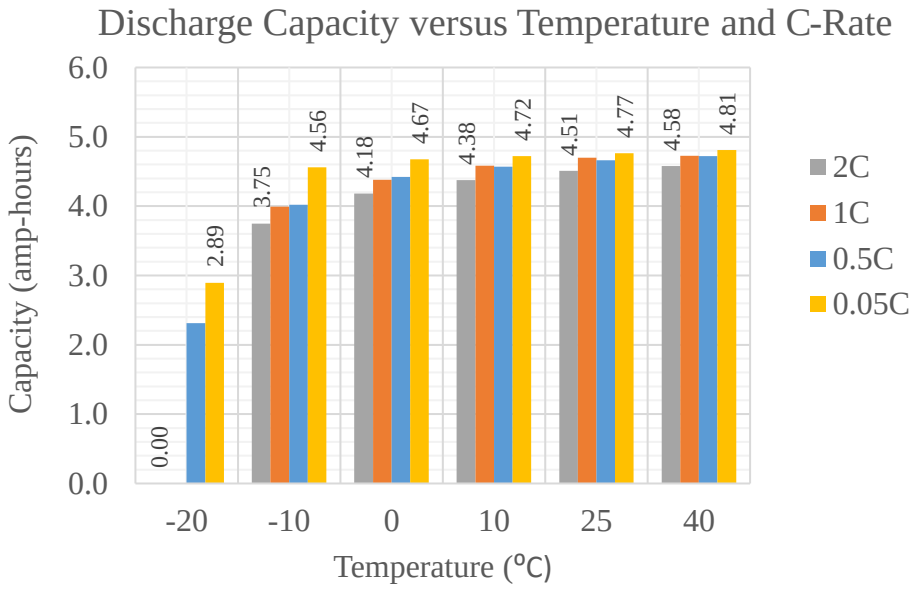
1- Battery Main Specifications

Chemistry	**LiPO**
Nominal Voltage	**3.7 V**
Charge	**4.2V, 50mA End-Current (CC-CV) Fast**
Discharge	**2.8V End Voltage, 20A MAX Continuous Current**
Nominal Capacity	**5 Ah**
Energy Density	**134 (Wh/Kg)**

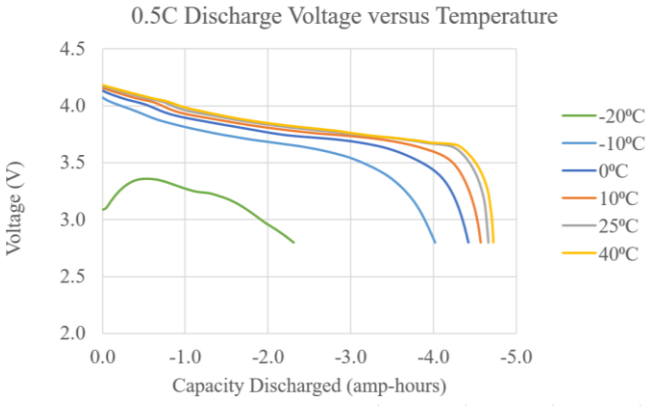
Cell removed from *Turnigy Graphene 5000mAh 3S 65C LiPo Pack* below, dimensions 144 x 51 x 33 mm.

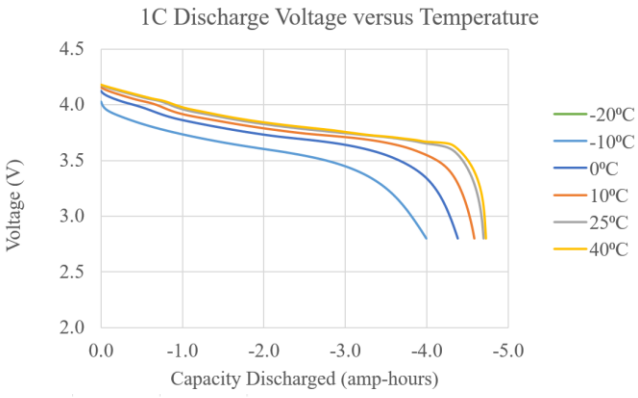
2- Discharge Capacity Vs Temperature and different C-Rate

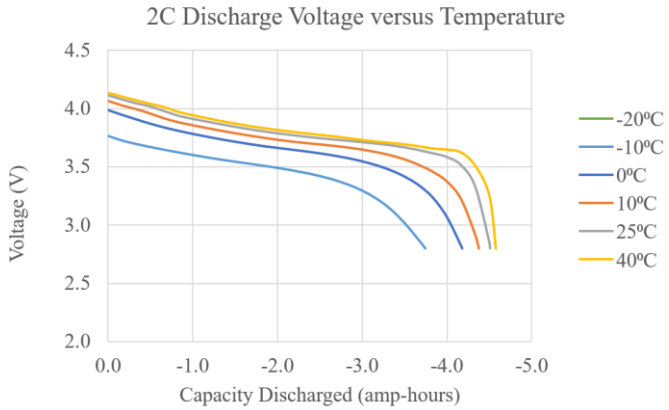

Discharge Capacity versus Temperature and C-Rate
Capacity (amp-hours)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-20
-10
0
10
20
30
40
Temperature (°C)
0.05C
0.5C
1C
2C


Discharge Capacity versus Temperature and C-Rate
Capacity (amp-hours)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.00
2.89
3.75
4.56
4.18
4.67
4.38
4.72
4.51
4.77
4.58
4.81
-20
-10
0
10
25
40
Temperature (°C)
2C
1C
0.5C
0.05C

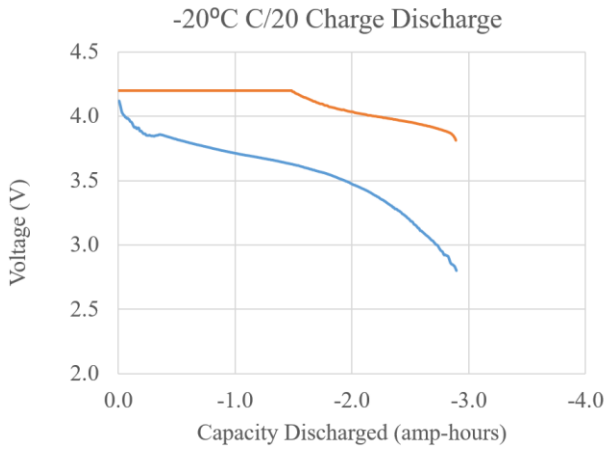
3- Discharge Voltage Vs Temperature at different C-Rate

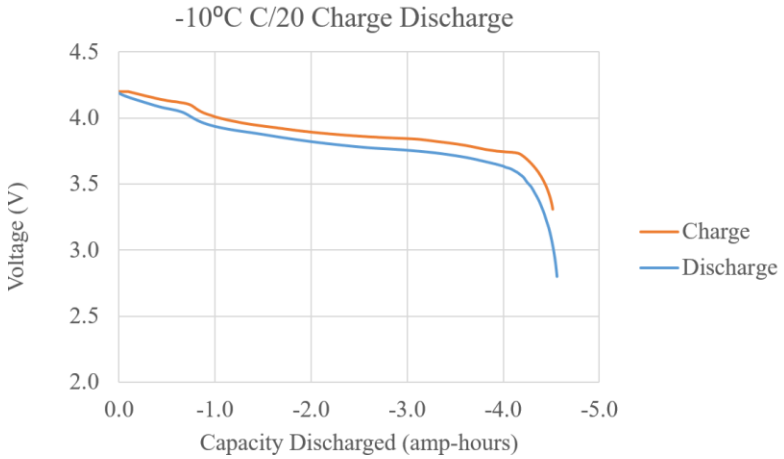


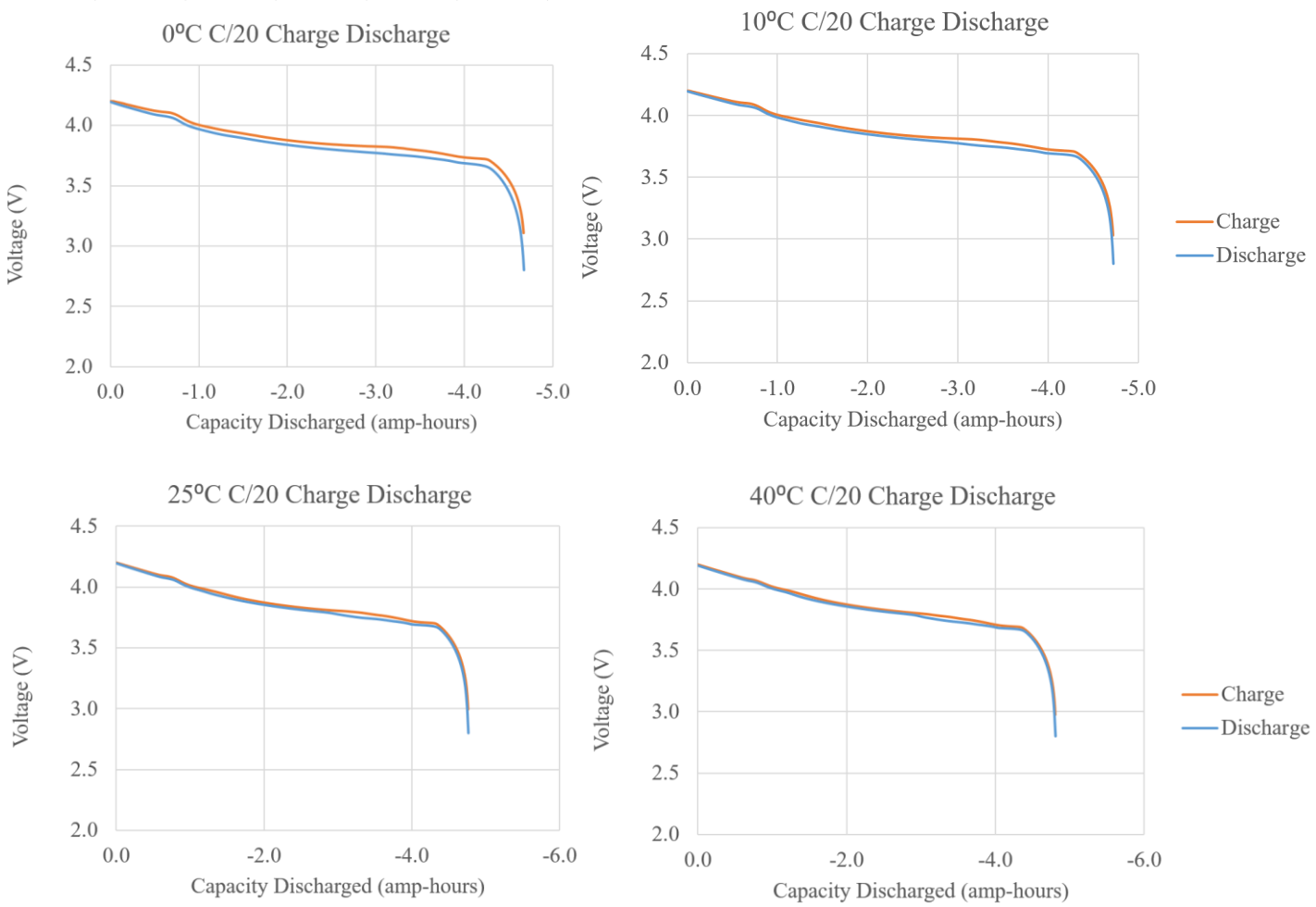




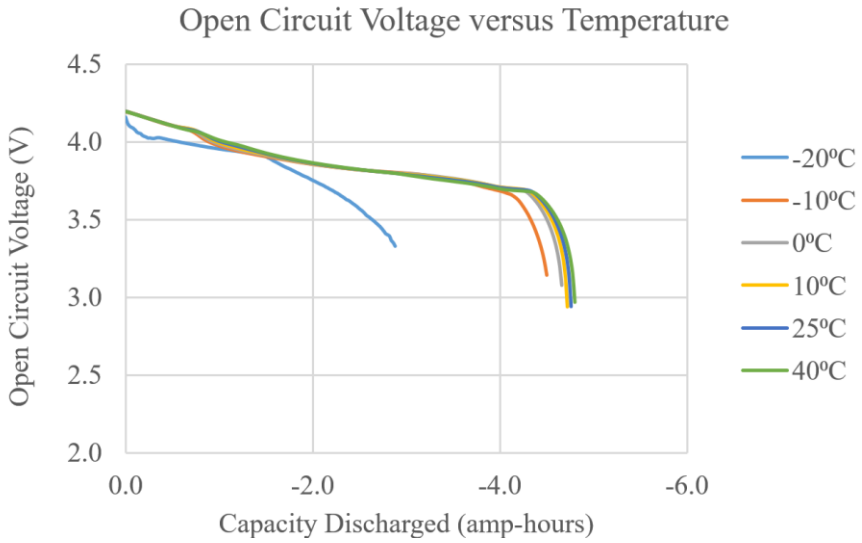
4- Charge/Discharge Voltage Vs C-Rate at different Temperatures



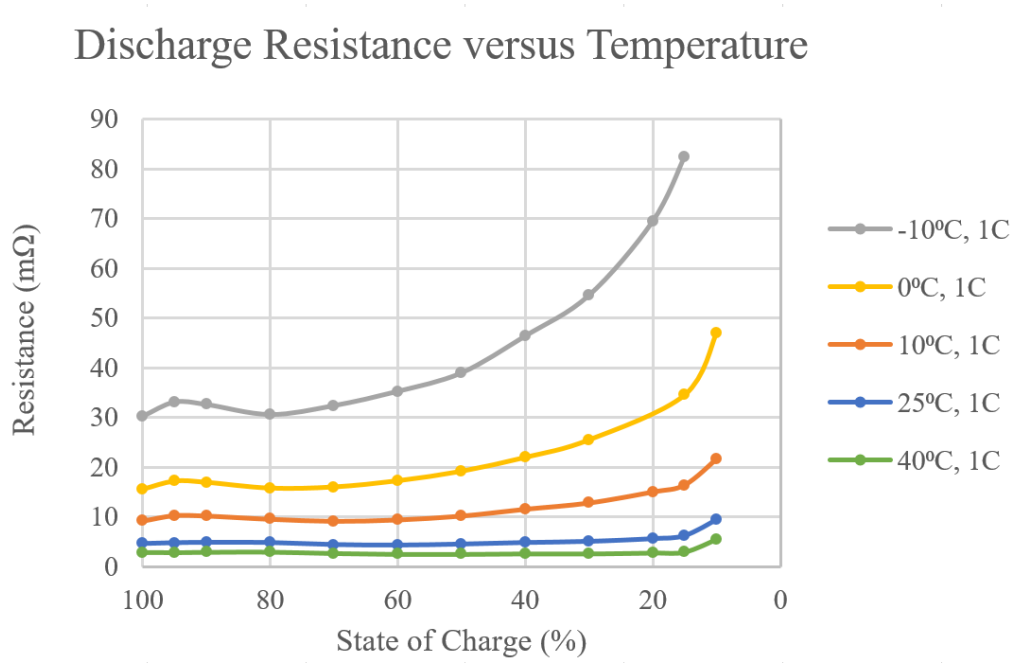




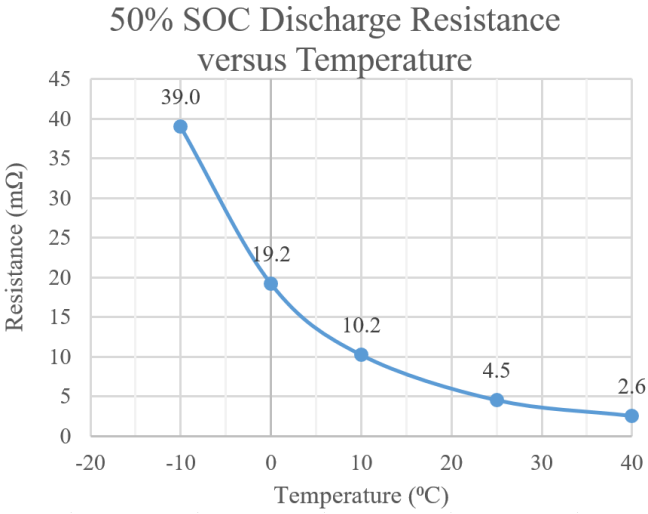
5- Open Circuit Voltage Vs Temperature at 0.05 C-Rate

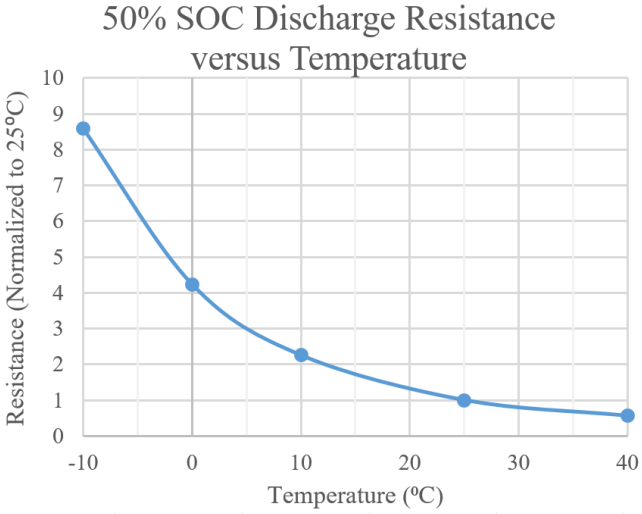


6- HPPC Resistance Vs Temperatures at different C-Rates

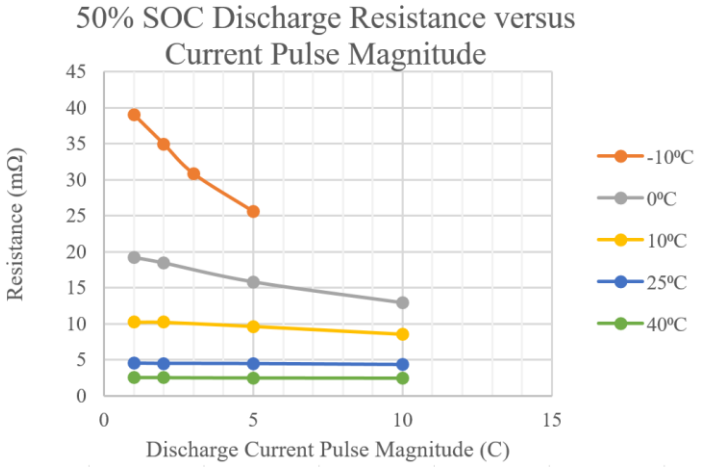


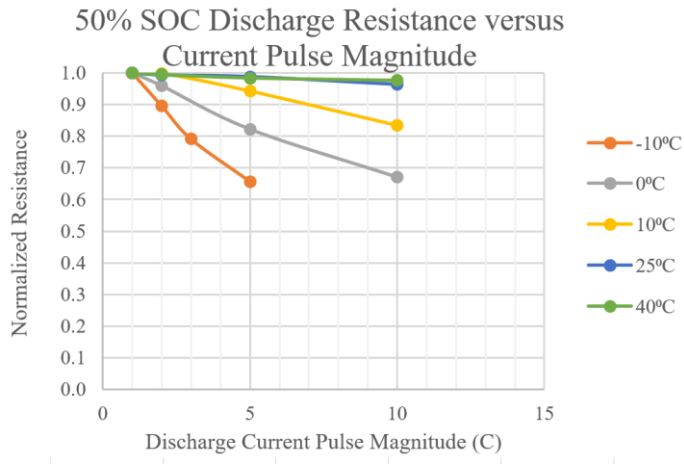
7- HPPC Resistance Vs Temperatures at 50% SOC



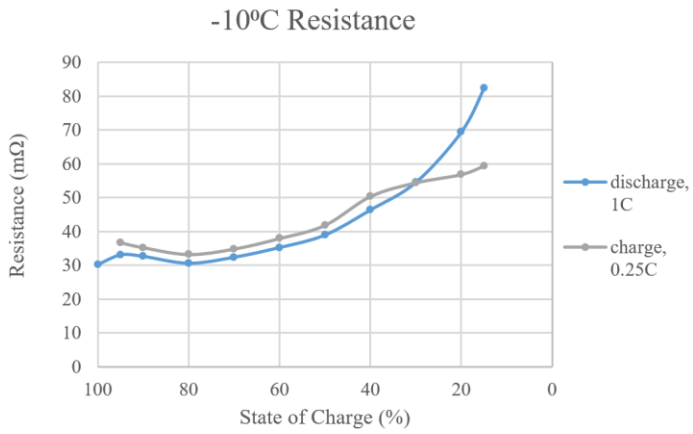


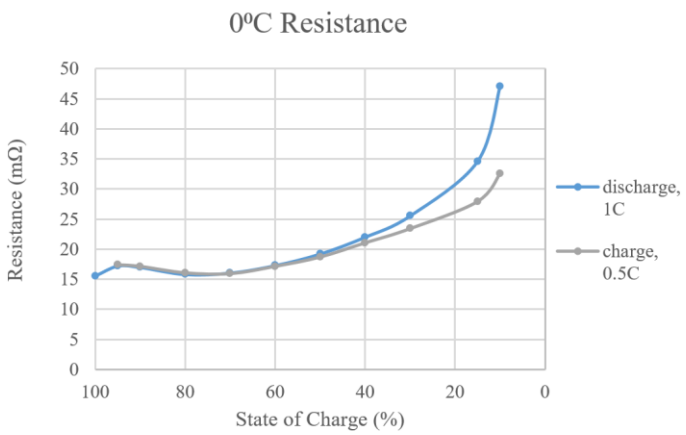
8- HPPC Resistance Vs C-Rates at 50% SOC

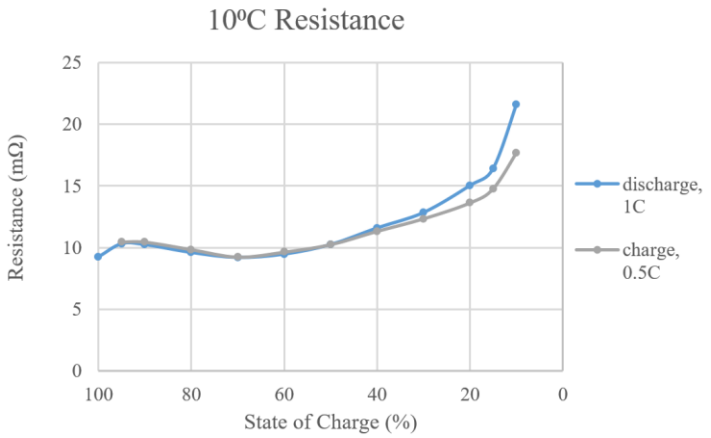


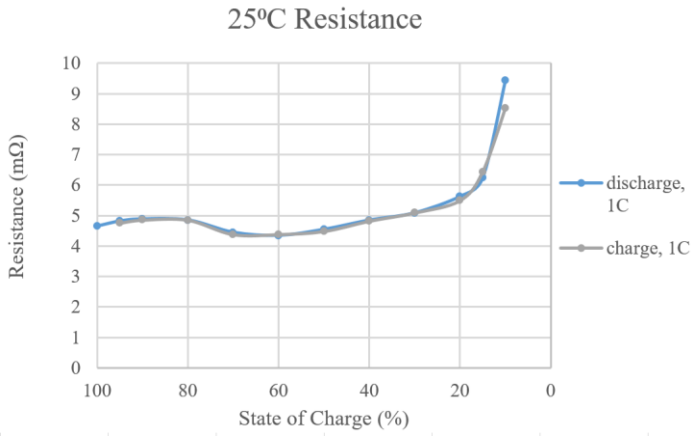


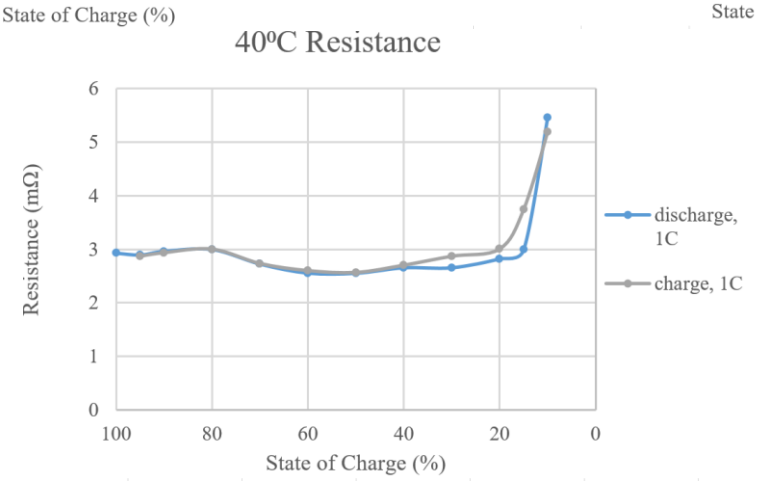
9- HPPC Resistance Vs Temperatures at different C-Rate

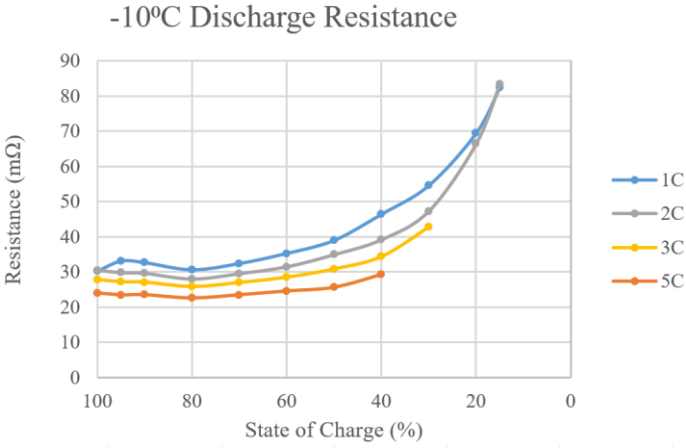


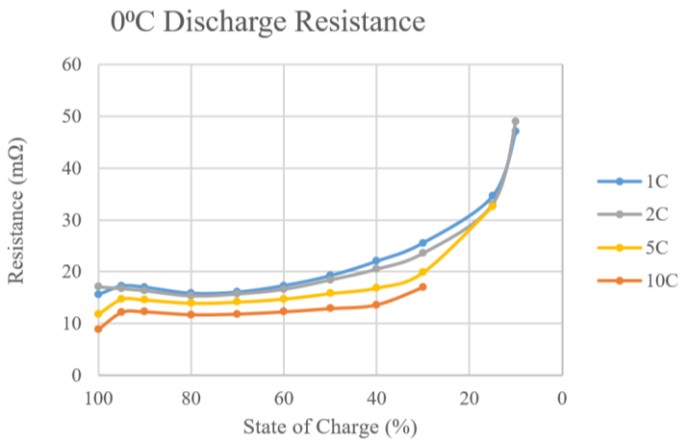


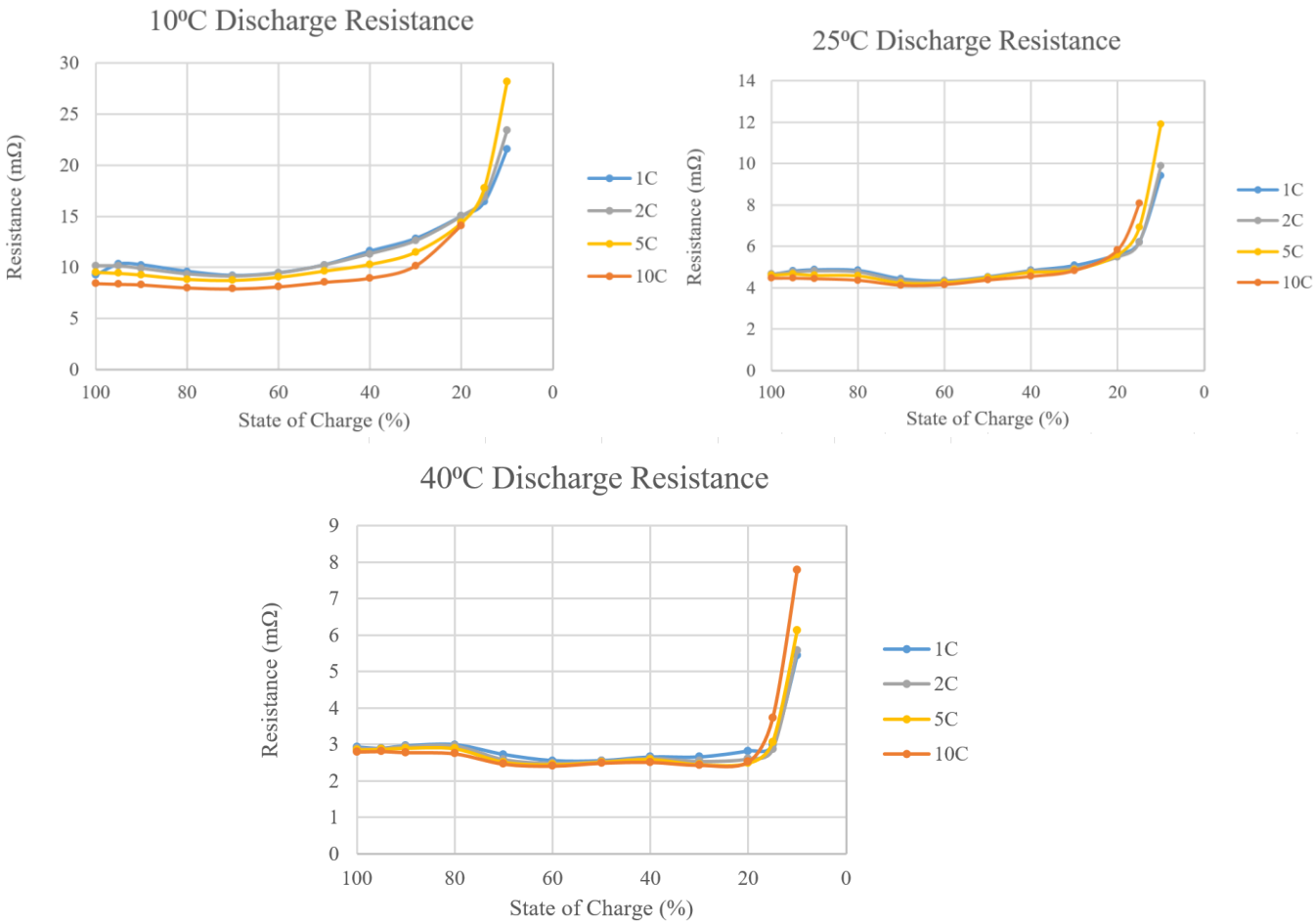

10ºC Resistance
Resistance (mΩ)
State of Charge (%)
discharge, 1C
charge, 0.5C


25ºC Resistance
Resistance (mΩ)
State of Charge (%)
discharge, 1C
charge, 1C


40ºC Resistance
Resistance (mΩ)
State of Charge (%)
discharge, 1C
charge, 1C


-10ºC Discharge Resistance
Resistance (mΩ)
State of Charge (%)
1C
2C
3C
5C


0ºC Discharge Resistance
Resistance (mΩ)
State of Charge (%)
1C
2C
5C
10C


10ºC Discharge Resistance
Resistance (mΩ)
30
25
20
15
10
5
0
100
80
60
40
20
0
State of Charge (%)
1C
2C
5C
10C
25ºC Discharge Resistance
Resistance (mΩ)
14
12
10
8
6
4
2
0
100
80
60
40
20
0
State of Charge (%)
1C
2C
5C
10C
40ºC Discharge Resistance
Resistance (mΩ)
9
8
7
6
5
4
3
2
1
0
100
80
60
40
20
0
State of Charge (%)
1C
2C
5C
10C