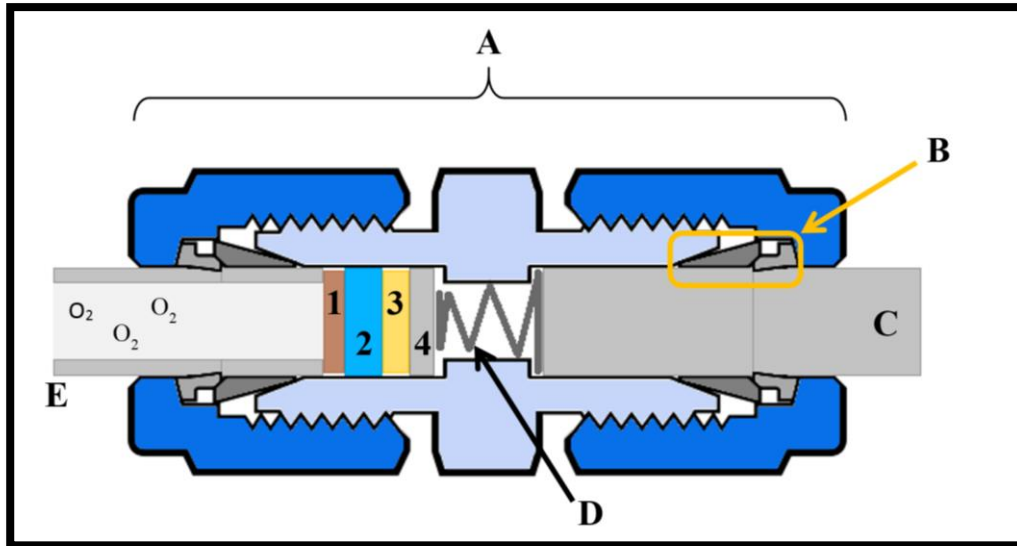
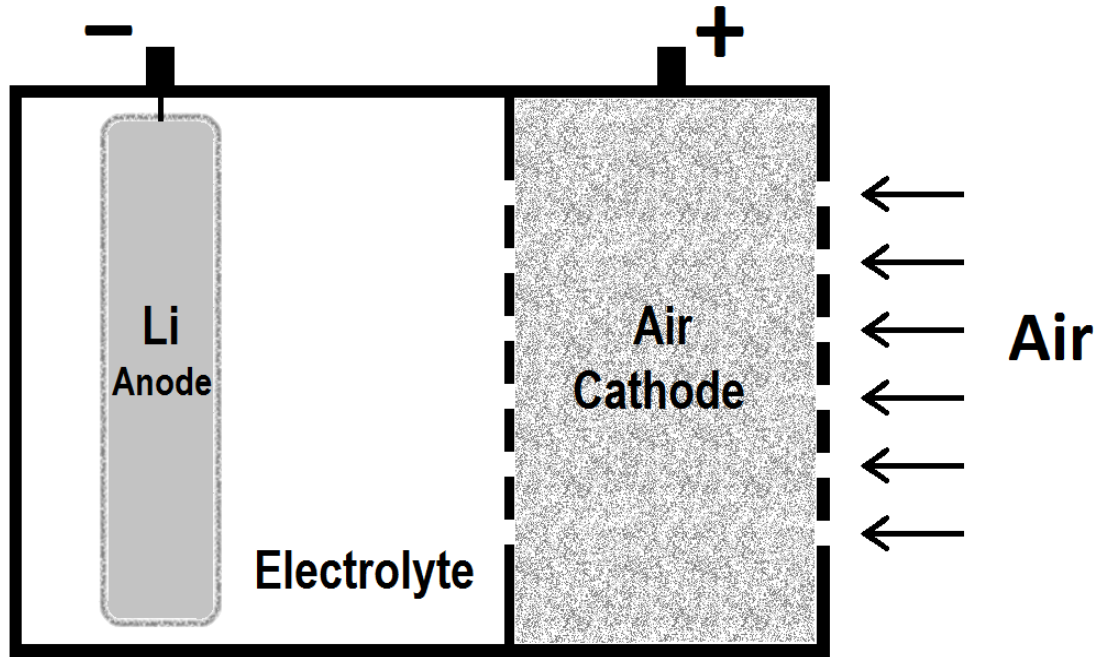


Characterization of lithium peroxide formation in lithium oxygen electrodes via EIS and titration techniques

Jeremiah Deboever

6-03-14

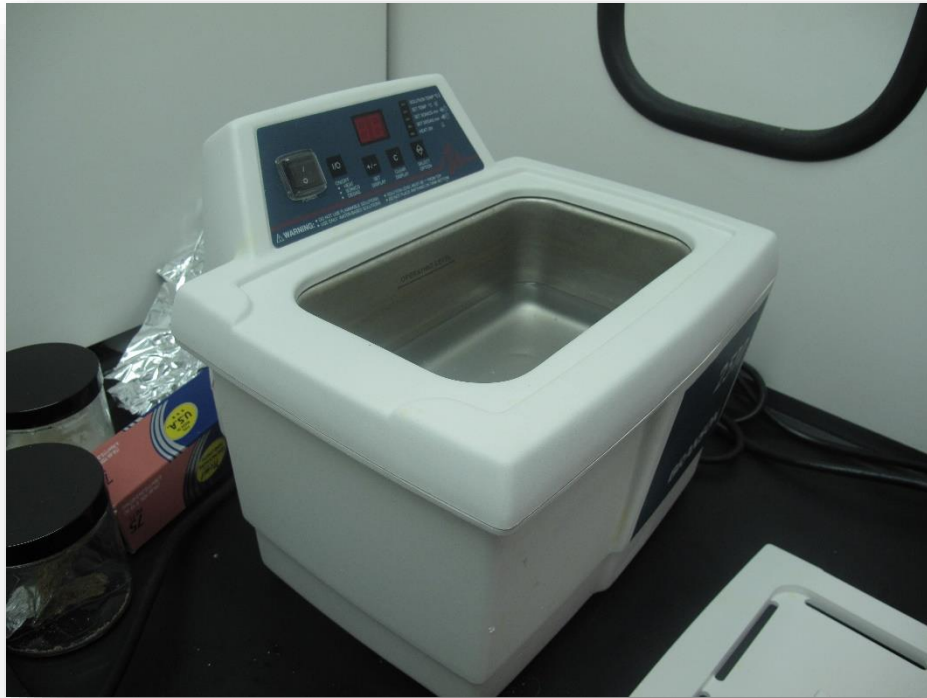
Batteries



Homogenizer



Sonicator



Glovebox System



amyyoulib.ecvv.com



6/25/2014

CAUTION

Moisture Capture

30 % Humidity → 0.02 % Humidity



Light Fixture

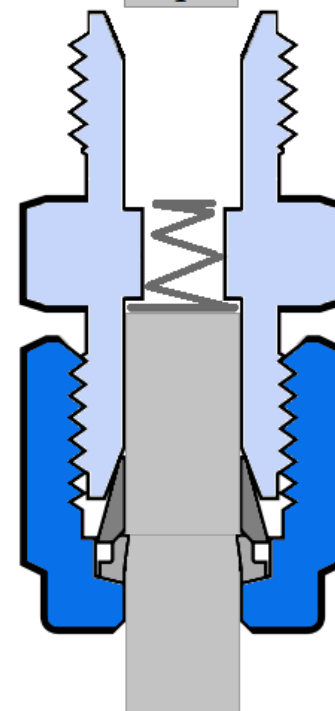


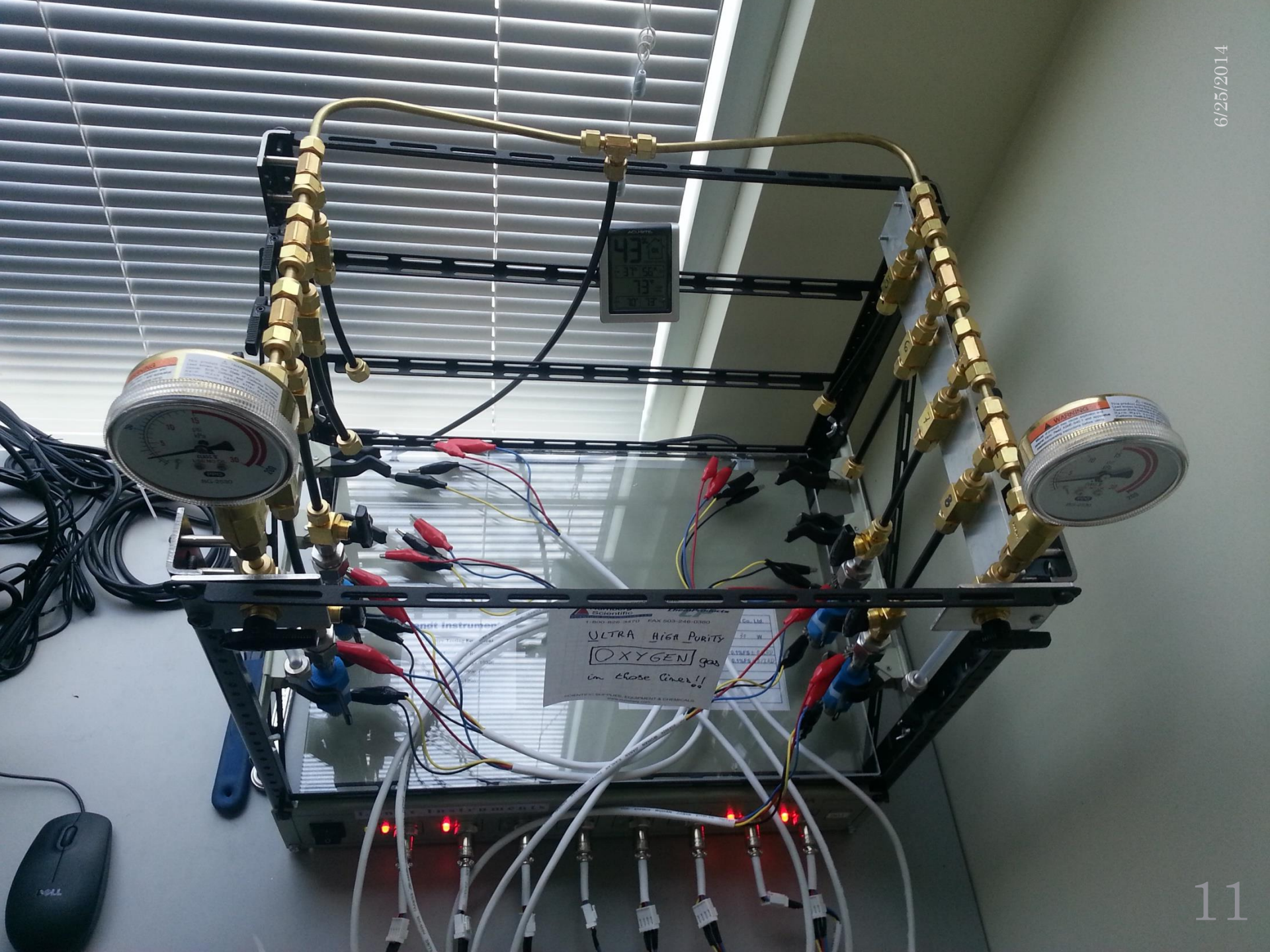


Building a battery



Carbon 4
Separator 3
Lithium 2
SS disk 1





ULTRA HIGH PURITY
OXYGEN gas
in these lines!!

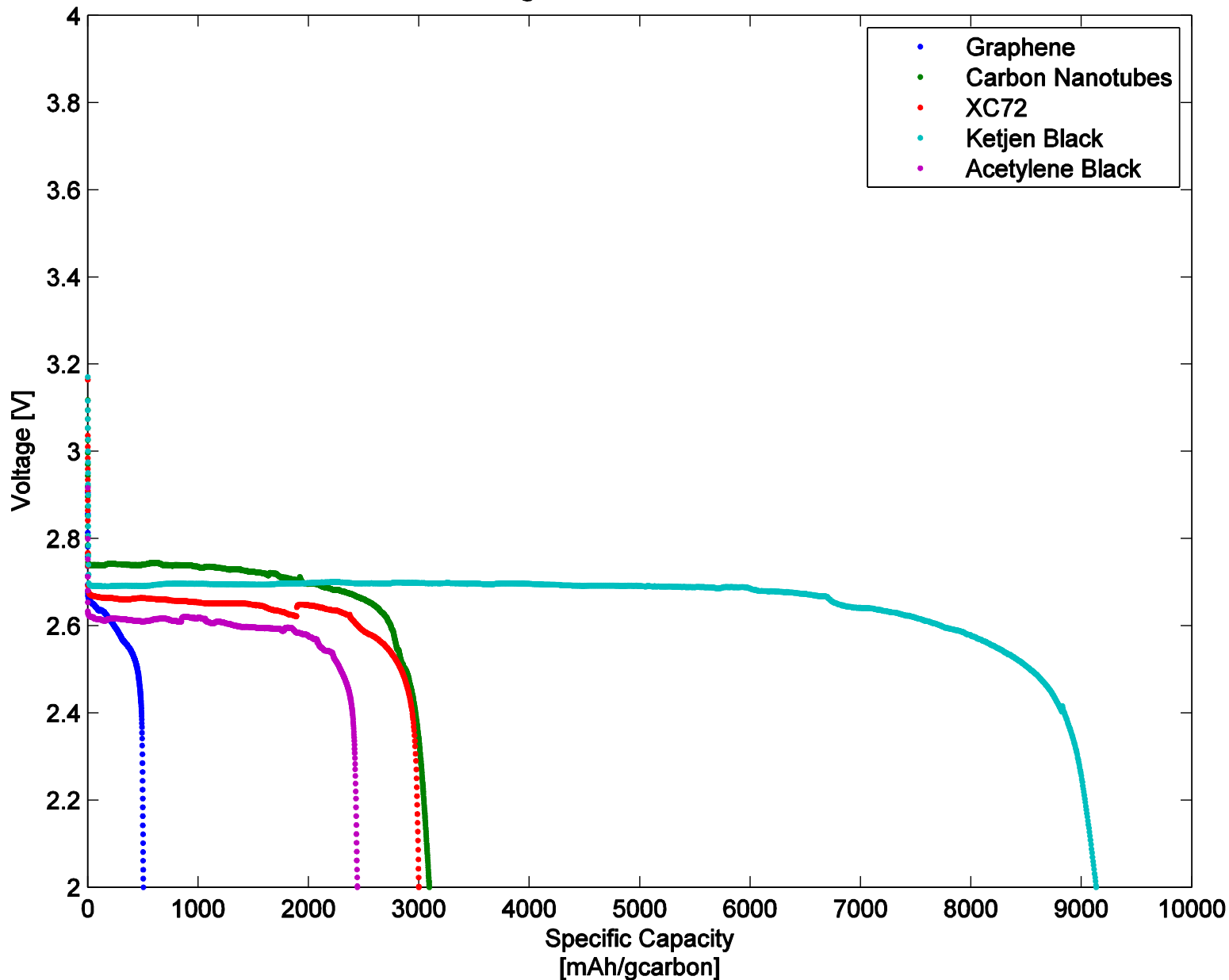
Why did I need to build batteries?

Characterization of lithium peroxide formation in lithium oxygen electrodes via EIS and titration techniques

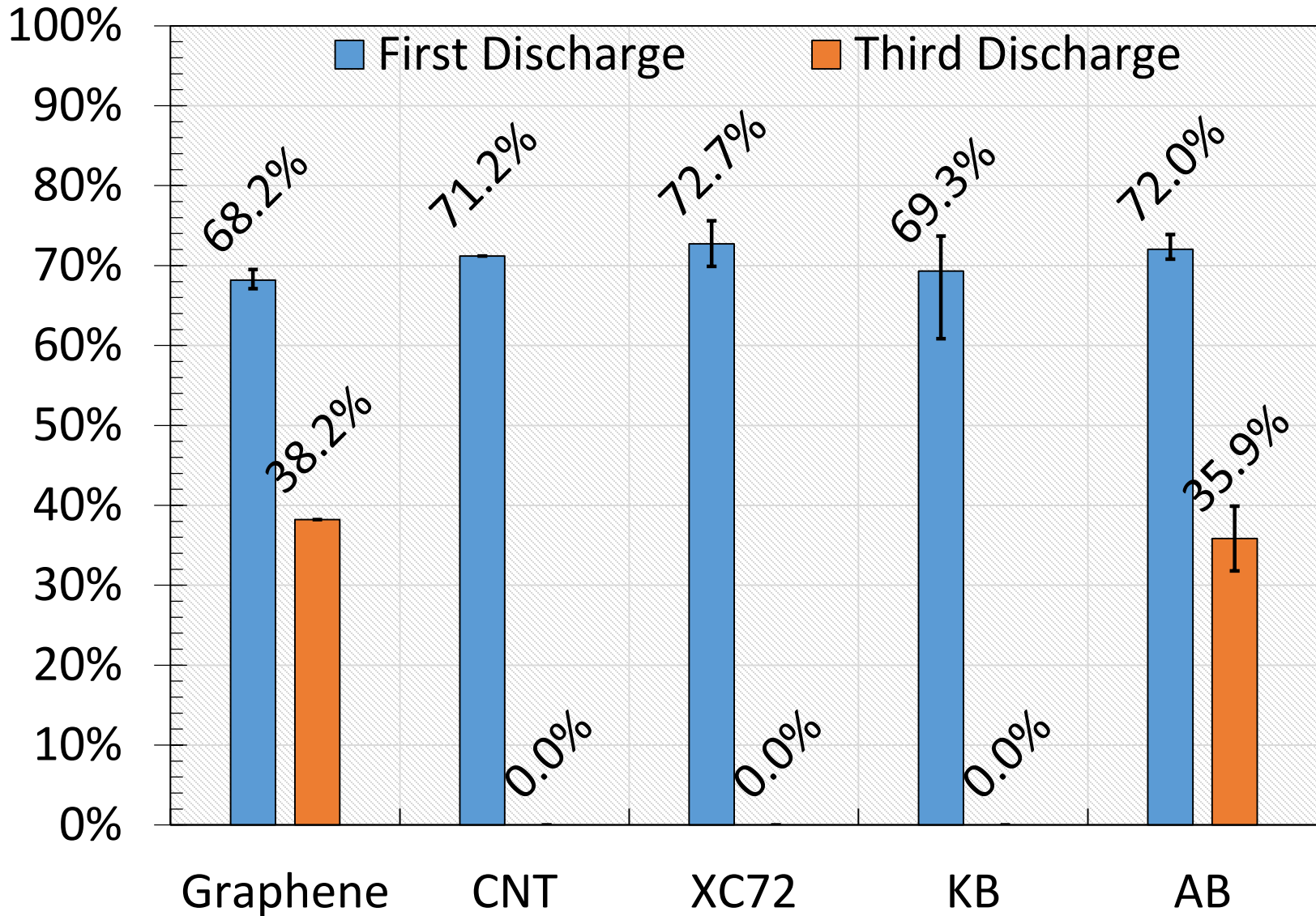
- Carbon Morphologies:
 - Tube-like structure
 - Sponge-like structure
 - Sheet-like structure

Performance

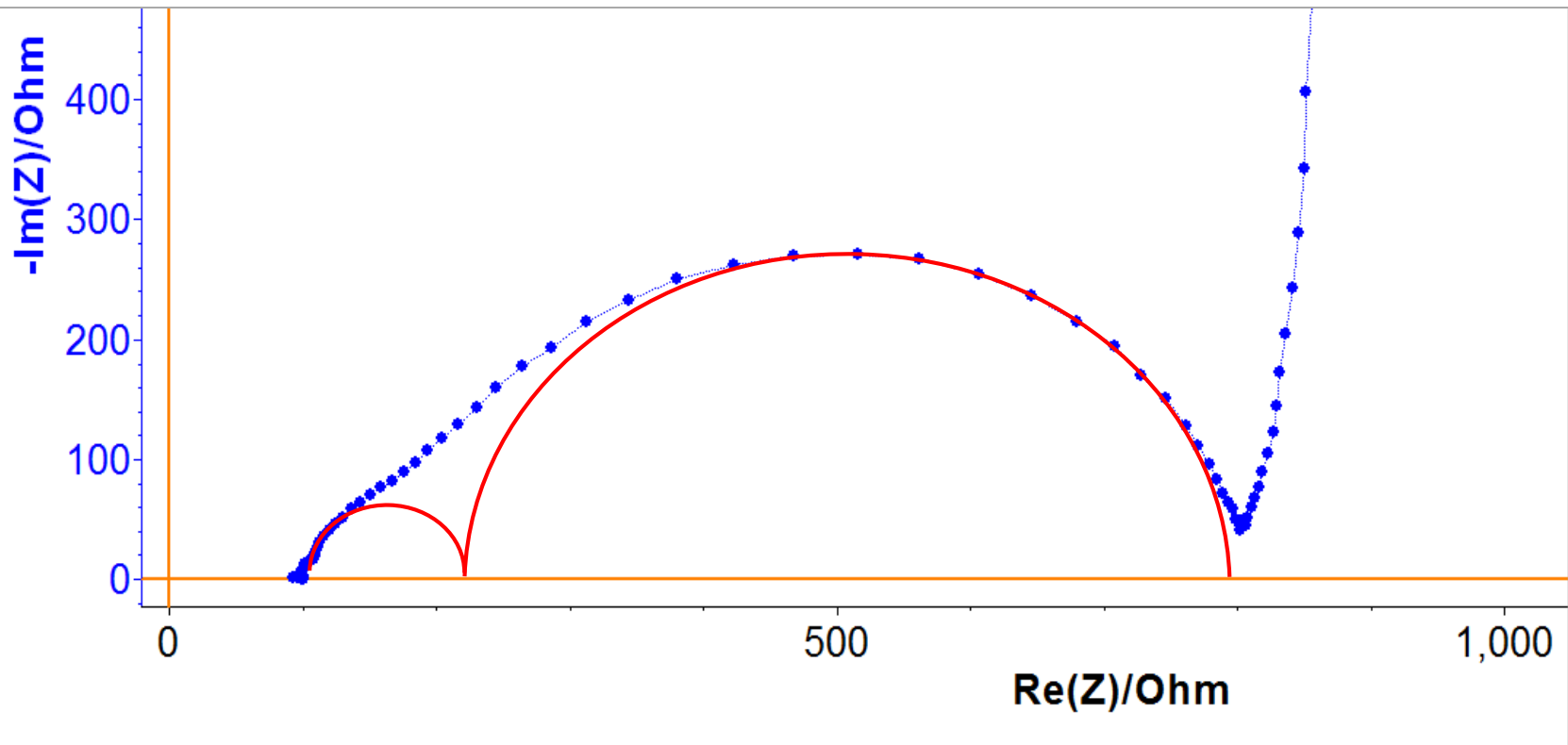
Discharge Profile of Various Carbon



Lithium Peroxide Yield



Impedance Spectroscopy Agreement



Special Thanks

