

Facilities

We have all required facilities to fabricate materials, conduct structural, chemical, spectroscopic and electrochemical characterization, in-operando spectroscopy and assemble and test batteries (coin/pouch cells). Our lab locations include CAT 471, CAT 469 and parts of shared lab CAT 362. Here is a list of equipment in our lab.

Glove Boxes

- 3 X MBraun LabStar (housed with coin cell and pouch cell assembling equipment)

Electrode Preparation and Coin/Pouch Cell Assembly

- 3 in 1 Heat Pouch Sealer
- 4000 Watts Ultra sonic tab welder
- MTI Coin cell Crimper/De-crimper
- Planetary Ball mill (800 rpm)
- Hot Rolling machine (4")
- Doctor Blade/Applicator
- Ohaus Precision Balance x 2
- Ultrasonicators X 2
- Carver Heat Press
- High Speed Homogenizer
- FlackTek SpeedMixer DAC 330-100 SE
- MTI Vacuum Mixer (MSK-SFM-7)
- MTI Automatic Film Coater MSK-AFA-II
- MTI Automatic Desktop Grinder MSK-SFM-8
- MTI 6 Position Compact SILAR Coating System

Ovens and Furnaces

- MTI Horizontal Tube Furnace (1000 / 1400)
- Thermolyn Tube Furnace
- Nabertherm Tube Furnace (RSH 170/1300)
- 3 X Vacuum Ovens
- Convection Oven
- Incubator
- Microwave Oven

Electrochemical Testing

- Bio-logic Potentiostat/ Galvanostat (12 Channels with two 10 Amp boosters) Biologic – EIS (4 Channels)
- 3 X Gamry Interface 1000 (Potentiostat/Galvanostat with EIS capability)
- Gamry Reference 3000 (Potentiostat/Galvanostat/ZRA with EIS capability)
- Maccor 4000 (32 Channels; max current 1 Amp)
- Neware BTS 4000 (72 Channels; max current 10 mA)
- Neware BTS 4000 (64 channels; max current 50 mA)
- Neware BTS 4000 (40 Channels; max current 6A)
- Neware BTS 4000 (8 Channels; max current 12 A)
- Pine Instruments (RDE)
- Environmental Chamber (Tenney) with high temperature/humidity control ranging from 25-200oC and 5-95%RH and integrated with vapor permeation and EIS
- Gamry EQCM
- Ossila Four-point Probe

Spectroscopy

- ThermoScientific – ATR FTIR (In-situ/in-operando cell compatible)

Electrospinning

- Elmarco NS Lab Equipment
- 4 X In-house electrospinning – New Era 1000 X 8; Syringe Pump New Era Dual; Syringe Pump; Gamma-High Voltage (30 kV)

Drexel's Centralized Research Facilities with state of the art SEMs, TEM, Ultramicrotome, FTIR, XPS, XRD, Multi-angle x-ray scattering, BET Surface area and Porosity Analyzer