

Materials List for:

Elemental-sensitive Detection of the Chemistry in Batteries through Soft X-ray Absorption Spectroscopy and Resonant Inelastic X-ray Scattering

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Materials

Name	Company	Catalog Number	Comments
Material			
Electrode active materials	various		Synthesized in-house or obtained from various suppliers.
Lithium foil	Sigma-Aldrich	320080	Anode for half cells. Store and handle in an inert atmosphere glovebox under Ar. (www.sigmaaldrich.com)
Sodium foil	Sigma-Aldrich	282065	Anode for half cells. Store and handle in an inert atmosphere glovebox under Ar. (www.sigmaaldrich.com)
Electrolyte solutions	BASF	Contact vendor for desired formulations	http://www.catalysts.basf.com/p02/USWeb-Internet/catalysts/en/content/microsites/catalysts/prods-inds/batt-mats/electrolytes
Synthetic flake graphite	Timcal	SFG-6	Conductive additive for electrodes. (www.timcal.com)
Indium foil	Sigma-Aldrich	357308	Used if collecting Carbon and Oxygen signals of power samples
Argon gas	Air Products	Custom order, contact vendors	Argon used to fill glovebox where to assemble and store air-sensitive samples. (http://www.airproducts.com/products/gases.aspx)
Equipment			
CCD	iKon-L	DO936N	Used to capture the emission photons when carrying out the sXES or RiXS experiment (http://www.andor.com/scientific-cameras/ikon-xl-and-ikon-large-ccd-series/ikon-l-936)
Inert atmosphere glovebox	MBRAUN	MB200B	Used during air-sensitive samples assembly and storage. (http://www.mbraun.com/products/glovebox-workstations/mb200b-mod)

Battery Charge & Discharge Tester	Bio-Logic	VMP3	Used to electrochemical cycling of battery materials. (https://www.bio-logic.net/en/)
Swagelok cell	MTI	EQ-HSTC	Used to contain the battery for electrochemical cycling
Sample holder	manufactured in lab		Used to hold the samples in the experiment
Hardware tools	various		Including tweezers, scissors (used to assemble samples), tongs (used to transfer sample holders), etc.
Carbon and Copper tape	3M	Custom order, contact vendors	Used to paste the samples onto sample holders
Igor Pro	WaveMetrics	7.06	Used to process the experiment data. (https://www.wavemetrics.com/index.html)