

Precise Electrochemical Sizing of Individual Electro-Inactive Particles

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Materials

Name	Company	Catalog Number	Comments
0.05 μm microalumina polish	Buehler	4010075	
0.3 μm microalumina polish	Buehler	4010077	
1 μm microalumina polish	Buehler	4010079	
20 mL scintillation vials	Fisher Sci	03-339-26C	
Analytical balance	Ohaus		
Apreo C LoVac FEG SEM	Thermo Fisher		
Carbon fiber microelectrode	ALS	002007	Working electrode; purchased from CH Instruments
Carboxyl Latex Beads, 4% w/v, 2 μm	ThermoFisher Scientific	C37278	
COMSOL Multiphysics	COMSOL Multiphysics	v6.0	
D-(+)-Maltose monohydrate	Sigma Aldrich	M5885	
DigiSim	Bioanalytical Systems, Inc.	v3.03b	Discontinued; comparable software is available commercially through the same vendor
EC-Lab	BioLogic	v11.27	
Faraday cages			Custom; analogous equipment can be commercially purchased or fabricated of conductive sheet metals (e.g., copper or aluminum)
Hummer Sputter Coater	Anatech USA		
OriginPro	OriginLab	v2022b	
P1000 micropipette	Fisher Scientific		
P2 micropipette	Fisher Scientific		
P20 micropipette	Fisher Scientific		
P200 micropipette	Fisher Scientific		
Platinum Wire Electrode	CH Instruments	CHI115	Counter electrode
Potassium chloride	Sigma Aldrich	P3911	
PSA-backed MicroCloth	Buehler	407218	
Saturated Calomel Electrode	CH Instruments	CHI150	Reference electrode

Sodium carbonate	Fisher Chemical	S263	
Sodium hydroxide	Sigma Aldrich	S8045	
Sodium perchlorate	EM Science	SX0692	
SP-300	BioLogic		
TEMPO	Oakwood Chemical	013714	
Ultra Low Current module	BioLogic		