

Materials List for:

Using Graphene Liquid Cell Transmission Electron Microscopy to Study *in Situ* Nanocrystal Etching

Matthew R. Hauwiler¹, Justin C. Ondry¹, A. Paul Alivisatos^{1,2,3,4}

¹Department of Chemistry, University of California-Berkeley

²Department of Material Science and Engineering, University of California-Berkeley

³Kavli Energy NanoScience Institute

⁴Materials Sciences Division, Lawrence Berkeley National Laboratory

Correspondence to: A. Paul Alivisatos at ngwilliams@lbl.gov

URL: <https://www.jove.com/video/57665>

DOI: [doi:10.3791/57665](https://doi.org/10.3791/57665)

Materials

Name	Company	Catalog Number	Comments
2-propanol (Isopropanol)	Sigma Aldrich	190764-4L	
Acetone	Fisher Chemical	A949-4 HPLC Grade	
FeCl ₃	Sigma Aldrich	44944-250g	
Gold Quantifoil, Amorphous Carbon TEM Grids	SPI Supplies	4230G-XA	300 Mesh Gold, R1.2/1.3- Often extensively on back-order
Graphene	ACS Materials	GnVCu3~5L-4x2in	We special order this to get graphene only on one side. The double sided product number is CVCU3022. Usually, we use 3-5 layer graphene for making Graphene Liquid Cells. If researchers need single layer graphene for their liquid cells, we have been using Grolltex recently
Hot Plate	IKA	C-MAG HS 7 Digital	
Hydrochlorid Acid	Fisher Chemical	7647-01-0	
Kimwipe Tissues	Kimberly-Clark	34120	
Matlab	Mathworks		
Millipore Water Filter	Millipore	F4NA85846D	
Sodium Persulfate	Sigma Aldrich	71890-500g	
Surgical Scalpel Blade	Swann-Morton	No. 6	
TEM	FEI	Tecnai T20 S-Twin	TEM needs to be linked to camera acquisition software to allow for dose rate calibration procedures.
TEM Cameara for in situ data collection	Gatan	Orius SC200	Custom digital micrograph scripts (written in house) for calibrating the C2 lens value to dose rate and collect in situ datasets
TEM Single Tilt Sample Holder	FEI		
Tris(hydroxymethyl)aminomethane hydrochloride (Tris Buffer HCl)	Fisher Biotech	1185-53-1	
Tweezers	Excelta	7-SA	