

Materials List for:

Fabrication of Zero Mode Waveguides for High Concentration Single Molecule Microscopy

Kevin Y. Chen¹, Ryan M. Jamiolkowski¹, Alyssa M. Tate¹, Shane A. Fiorenza², Shawn H. Pfeil², Yale E. Goldman¹

¹Pennsylvania Muscle Institute, Perelman School of Medicine, University of Pennsylvania

²Department of Physics, West Chester University

Correspondence to: Shawn H. Pfeil at SPfeil@wcupa.edu, Yale E. Goldman at goldmany@upenn.edu

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Materials

Name	Company	Catalog Number	Comments
1. Glass Coverslip Cleaning			
Acetone	Sigma	32201	1 L
Coplin glass staining jar	Fisher Scientific	08-817	Staining jar with 8 grooves and molded glass cover
Coverslips	VWR	48404-467	24 mm x 30 mm (No.1½, Rectangular)
Ethanol	Sigma	E7023	1 L
KOH	Sigma	30603	Potassium hydroxide
Petri dishes	Fisher Scientific	R80115TS	100 mm diameter, 15 mm deep
Sonicator	Branson	Z245143	Tabletop ultrasonic cleaner, 5510
2. Evaporative Deposition of Polystyrene Beads			
Clear storage container	Fisher Scientific	50-110-8222	26 x 18 x 15 in.
Desk fan	O2Cool	FD05001A	Any small desk (~5 in.) fan will work
Glass beaker	Fisher Scientific	02-555-25B	250 mL
Humidity meter	Fisher Scientific	11-661-19	
Microcentrifuge tubes	Fisher Scientific	21-402-903	1.5 mL
Polystyrene microspheres	Polysciences	18602-15	1.00 µm diameter, non-functionalized
Triton X-100 detergent	Sigma	X100	100 mL
3. Bead Annealing for Reducing Pore Size in the Colloidal Crystal Template			
Aluminum plate	Fisher Scientific	AA11062RY	Customized in-house to 14 cm x 14 cm
Ceramic hotplate	Fisher Scientific	HP88857100	13 x 8.2 x 3.8 in.
Temperature controller	McMaster-Carr	38615K71	Read temperature with thermocouple probe
Thermocouple probe	McMaster-Carr	9251T93	Type K, surface probe
4/5. Nanofabrication of Zero Mode Waveguides Using the Colloidal Crystal Template			
Aluminum etchant	Transene	Type A	
Aluminum pellets	Kurt J. Lesker	EVMAL40QXHB	For electron beam evaporation
Chloroform	Sigma	288306	1 L
Copper etchant	Transene	49-1	

Copper pellets	Kurt J. Lesker	EVMCU40QXQA	For electron beam evaporation
Gold pellets	Kurt J. Lesker	EVMAUXX40G	For electron beam evaporation
Lens paper	Thorlabs	MC-5	
Plasma cleaner	Harrick Plasma	PDC-32G	
Scotch tape	Staples	MMM119	
Thin film deposition system	Kurt J. Lesker	PVD-75	Tabletop thermal evaporation system will also work
Titanium pellets	Kurt J. Lesker	EVMTI45QXQA	For electron beam evaporation
Toluene	Sigma	244511	1 L
Representative Results			
COMSOL Multiphysics Modeling Software	COMSOL, Inc.		
Dual View spectral splitter	Photometrics, Inc.		