

Materials List for:

Optical Trapping of Nanoparticles

Jarrah Bergeron¹, Ana Zehtabi-Oskuie¹, Saeedeh Ghaffari¹, Yuanjie Pang¹, Reuven Gordon¹

¹Electrical and Computer Engineering, University of Victoria

Correspondence to: Reuven Gordon at rgordon@uvic.ca

URL: <https://www.jove.com/video/4424>

DOI: [doi:10.3791/4424](https://doi.org/10.3791/4424)

Materials

Name	Company	Catalog Number	Comments
Immersion Oil	Cargille Labs	16484	Quantity: 1
Sylgard 184 Silicone Elastomer Kit	Dow Corning Canada		Quantity: 1 Contains both PDMS base and curing agent
Gold Coated Test Slides	EMF Corp	Cr/Au	Quantity: 1 A Ti adhesion layer can be used as well
No 1.5 Coverslips	Fisher Scientific	12-541-B	Quantity: 1
Focused-Ion Beam System	Hitachi	FB-2100	
Portable Data Acquisition Module	Omega Engineering	USB-4711A	Quantity: 1
Linear Stage	Parker	4034M	Quantity: 1
Laser Diode Head and Controller	Sacher Lasertechnik Group	TEC 120	Quantity: 1 Manual Tunable Littrow Laser System
Digital Oscilloscope	Tektronics	TDS1012	Quantity: 1
20 nm Nanosphere Size Standards	Thermo Scientific	3020A	Quantity: 1
1" Lens Mount	 Thorlabs	LMR1	Quantity: 1
0.3" Lens Tube	 Thorlabs	SM1L03	Quantity: 2
Absorptive ND 4.0 Filter	 Thorlabs	NE40A	Quantity: 1
Aluminum Breadboard	 Thorlabs	MB1824	Quantity: 1
Avalanche Photodiode	 Thorlabs	APD110A	Quantity: 1
Digital Optical Power Meter	Thorlabs	PM100	Quantity: 1 Obsolete, others will do
Force Measurement Module	Thorlabs	OTKBFM	Quantity: 1
Kinematic Mirror Mount	Thorlabs	KM200-E03	Quantity: 1 With Near IR Laser Quality Mirror
Laser Diode Constant Current Driver	Thorlabs	LD1255R	Quantity: 1
LD1255 Optical Table Mounting Plate	Thorlabs	LD1255P	Quantity: 1
Mounted Achromatic Half-Wave Plate	Thorlabs	AHWP05M-980	Quantity: 1 690 - 1200 nm
Optical Tweezer Kit	Thorlabs	OTKB/M	Quantity: 1 Metric or Imperial
Post Holder Base	Thorlabs	BA2	Quantity: 2
Power Supply	Thorlabs	PS-12DC-US	Quantity: 1
Power Supply Cable	Thorlabs	LD1255-CAB	Quantity: 1

Right Angle Plate	 Thorlabs	AP90	Quantity: 1
Right Angle Post Clamp	 Thorlabs	RA90	Quantity: 1
Stainless Steel Optical Post	 Thorlabs	TR3	Quantity: 1
Table Clamp	 Thorlabs	CL1	Quantity: 2 Obsolete, others will do
Thermal Sensor	 Thorlabs	PM210	Quantity: 1 For digital optical power meter
100 pF Capacitor			Quantity: 1 Any brand, not critical
200 KOhm Resistor			Quantity: 1 Any brand, not critical
Acrylic Sheet			Quantity: 3" x 1" Any brand, not critical
Assortment of coaxial cables, wires and connectors			As needed
Breadboard			Quantity: 1 Any brand, not critical
Concave Lens			Quantity: 1 Any brand, not critical
Diamond Cutter			Quantity: 1 Any brand, not critical
Double Sided Tape			Any brand, not critical
Razor Blade			Quantity: 1 Any brand, not critical
Tweezers			Quantity: 1 Any brand, fine tipped