

Materials List for:

# Fabrication and Implementation of a Reference-Free Traction Force Microscopy Platform

Omar A. Banda<sup>1</sup>, John H. Slater<sup>1,2,3</sup>

<sup>1</sup>Department of Biomedical Engineering, University of Delaware

<sup>2</sup>Department of Materials Science & Engineering, University of Delaware

<sup>3</sup>Delaware Biotechnology Institute

Correspondence to: John H. Slater at [jhslater@udel.edu](mailto:jhslater@udel.edu)

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## Materials

Name	Company	Catalog Number	Comments
Acrodisc Syringe Filter, 0.2 µm Supor Membrane, Low Protein Binding	Pall	PN 4602	Allows for filtering of macromer solutions prior to base gel synthesis and subsequent lithography steps.
Acrylate-Silane Functionalized #1.5 Coverslips	<i>in-house</i>	<i>in-house</i>	Acrylates allow binding of base hydrogel to the glass surface to immobilize the hydrogels. See reference: 21-24
Axio-Observer Z1 w/Apotome	Zeiss		Widefield microscope with structured illumination module used to capture images for TFM.
Chameleon Vision ii	Coherent Inc.		Equipped on laser-scanning microscope used for multiphoton Lithography.
Double Coated Tape, 9500PC, 6.0 mil	3M		Binds acrylate-silane functionalized coverslips to Petri dishes.
Flexmark90 PFW Liner	FLEXcon	FLX000620	Allows lining of double coated tape enabling feeding of tape into plotter.
LSM-880	Zeiss		Laser-Scanning microscope used for Multiphoton Lithography.
MATLAB	Mathworks	R2018a	Runs custom scripts to generate lithography instructions for microscope and for analysis of TFM data.
Model SC Plotter	USCutter	SC631E	Cuts double coated tape into rings to bind coverslips to petri dishes.
Objective C-Apochromat 40x/1.20 W Corr M27	Zeiss		Equipped on both widefield microscope and laser-scanning microscope to be used for both lithography and TFM.
PEG-AF633	<i>in-house</i>	<i>in-house</i>	Fluorophore-labeled acrylate PEG variant for creating fiducial markers. See reference: 21
PEG-DA	<i>in-house</i>	<i>in-house</i>	Base material for hydrogels. See reference: 21
PEG-RGDS	<i>in-house</i>	<i>in-house</i>	RGDS peptide-labeled mono-acrylate PEG variant for promoting cell-adhesion. See reference: 21
Petri Dishes	CELLTREAT	229638	8mm holes are cut into the center of each dish using a coring bit to fit base hydrogels.

Sylgard 184 Silicone Elastomer Kit	Dow Corning	3097358-1004	For creating spacers to control base hydrogel thickness (aka PDMS).
Syringe, Leur-Lok, 1 mL	BD	309628	Allows for filtering of macromer solutions prior to base gel synthesis and subsequent lithography steps.
UV Lamp	UVP	Blak-Ray® B-100AP	Polymerizes base hydrogel.
1-vinyl-2-pyrrolidinone (NVP)	Sigma-Aldrich	V3409-5G	Radical accelerant and co-monomer. Improves pegylated fluorophore incorporation during lithography.