

**Supplementary Table 1.** Parameter values input to the LIBTRC templet file and used to obtain contraction stress data. For parameters not listed in this table, the default values were used.

<b>Parameter</b>	<b>Description</b>	<b>Value</b>	<b>Units (if applicable)</b>	<b>Source</b>
<b>YMODU</b>	Elastic modulus of substrate	4.400E+03 to 9.970E+04	Pa	Tensile testing of PA hydrogels (see Figure 1)
<b>POSRA</b>	Poisson's ratio of substrate	3.000E-01		Assumed value for all PA compositions
<b>TFILM</b>	Thickness of substrate	1.000E-03	m	Thickness of PDMS spacers used to generate PA hydrogels
<b>BDIAM</b>	Diameter of fluorescent beads	7.200E-07	m	Label on fluorescent bead packaging
<b>ZBAVE</b>	Average depth of beads below surface of surface	-2.000E-06	m	Z-stack of a typical substrate using Nikon A1R confocal microscope
<b>NPIXX</b>	X dimension of image	5.120E+02	pixels	Image property
<b>NPIXY</b>	Y dimension of image	5.120E+02	pixels	Image property
<b>NBITS</b>	Number of bits/pixel of image	1.600E+01		Image property
<b>ZDEEP</b>	Depth of optical section	3.010E-06	m	Obtained from Nikon NIS-Elements software
<b>MPPX</b>	Width of pixel in the X direction	2.100E-07 to 3.100E-07	m	Depends on additional zoom of data set
<b>MPPY</b>	Height of pixel in the Y direction	2.100E-07 to 3.100E-07	m	Depends on additional zoom of data set

Reference: Dembo, M. (2010) The LIBTRC User's Guide for Version 2.4.