

Supplementary Information

Liquid VASE Fit Layers	Thickness	Refractive Index
Dextran	Measured	$1.51 + 0.01/\lambda^2$
PAAm-g-PFPA	Measured before spin-coating	$1.45 + 0.01/\lambda^2$
Silicon oxide	Measured before adsorption	Built in to software
Silicon substrate	Infinite	Built in to software

Table S1. VASE multilayer model used to fit the dry measurements. As the refractive index formula indicates, the PAAm-g-PFPA and dextran layers are treated as Cauchy films.

Liquid VASE Fit Layers	Thickness	Refractive Index
Ambient water	Infinite	1.333
Dextran/water mixture (Bruggeman effective medium)	Measured	Measured mix of 1.51 and 1.333
PAAm-g-PFPA	Measured dry before spin-coating	$1.45 + 0.01/\lambda^2$
Silicon oxide	Measured dry before adsorption	Built in to software
Silicon substrate	Infinite	Built in to software

Table S2. VASE multilayer model used to fit the liquid-cell measurements. As the refractive index formula indicates, the PAAm-g-PFPA layer is treated as a Cauchy film.

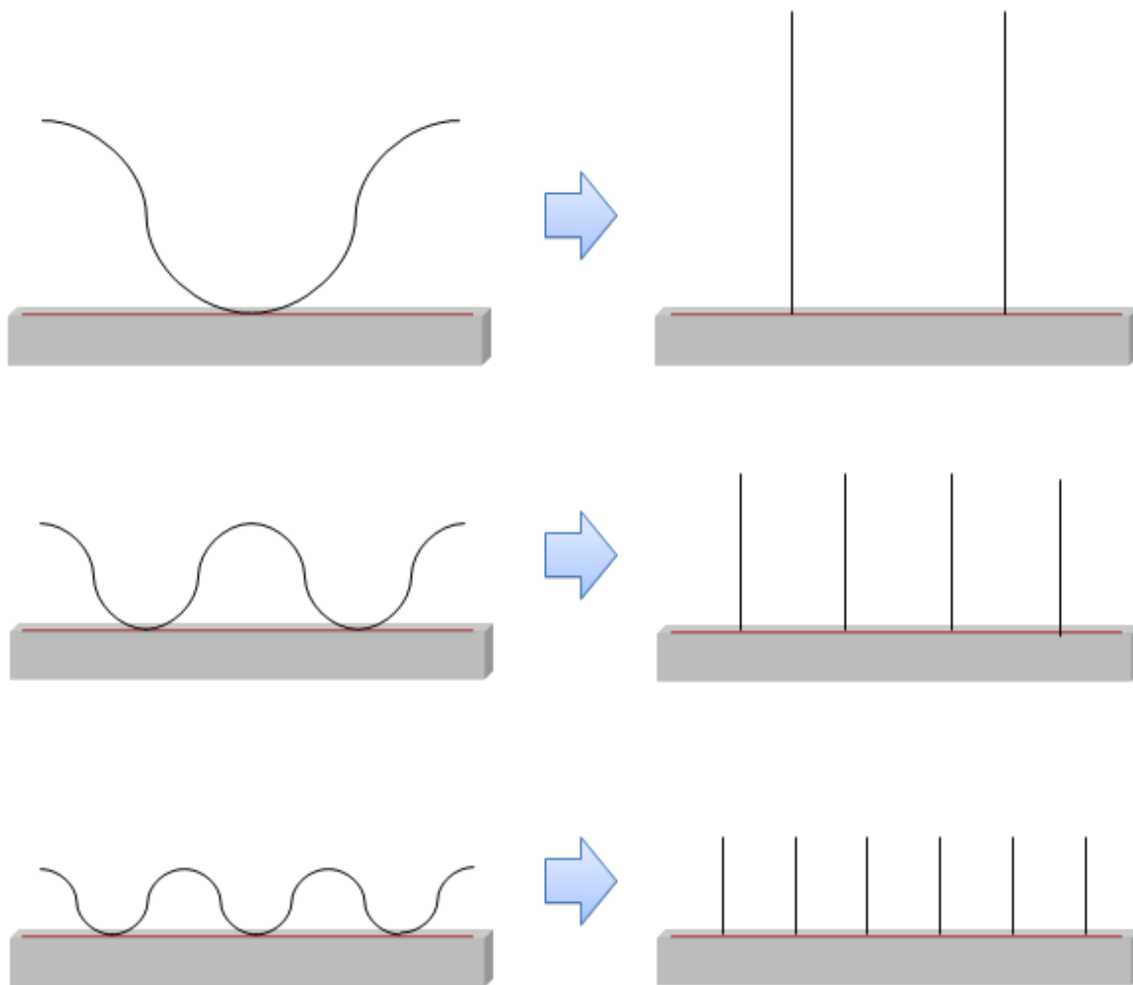


Figure S1. Schematic representation of the model used to calculate probable dextran attachment density. The 2 MDa dextran chain is attached to the substrate at either one, two, or three points, spaced such that the end and loop lengths are equal. These are then treated as discrete end-attached chains, and the height of the polymer brush of corresponding chain length and surface density is then calculated assuming that the chains are swollen to their hydrodynamic volume.