

Supplementary Data

Table S1: Single Surface Fitting Parameters

| Solvent | dPS T (Å) | dPS SLD | P2VP T (Å) | P2VP SLD | Q SLD | Roughness (Å) | | | FS - | Q- PS | FS P2VP Air |
|-----------|--------------|------------|---------------|-------------|------------|------------------|-------|-----|---------|----------|-------------------|
| | | | | | | 145 | 1.8 | 4.2 | 2.6 | | |
| Air | 131 | 6.5 | | | | | | | | 11 | 5 |
| h-Toluene | h_1 (Å) | h_2 (Å) | $SLD(0)$ | $SLD(h_1)$ | $SLD(h_2)$ | n_1 | n_2 | | | | 3 |
| Small | 570 | 330 | 2.5 | 1.5 | 0.9 | 2 | 2 | 75 | 1.6 | 4.2 | 1.6 |
| | | | | | | | | | 28 | 5 | |

Table S2: Opposing Symmetric Polymer Brush Fitting Parameters

| Solvent | D(Å) | T(Å) | dPS | dPS | P2VP | | | Si | | | SiO ₂ | | | P2VP- | | |
|------------------|------|------|-----|------|------|-----|-----|------|-----|------|------------------|----|------------------|-------|-----|--------|
| | | | SLD | SLD | T(Å) | SLD | SLD | T(Å) | SLD | SLD | T(Å) | PS | SiO ₂ | P2VP | S | PS-Air |
| h-Toluene | | | | | | | | | | | | | | | | |
| Air | 1110 | 120 | 6.4 | | | | | | | | | | | | | |
| Small | 933 | 329 | 430 | 2.88 | 2.16 | 1.7 | 2.7 | 2.0 | 120 | 1.60 | 2.10 | 15 | 3.51 | 5.76 | 2.1 | 45 |
| Medium | 969 | 329 | 430 | 2.81 | 1.99 | 1.7 | 2.5 | 2.0 | 120 | 1.60 | 2.10 | 13 | 3.54 | 5.68 | 2.4 | 45 |
| Large | 1000 | 330 | 480 | 2.74 | 1.86 | 1.6 | 2.4 | 2.3 | 120 | 1.60 | 2.10 | 14 | 3.54 | 5.69 | 2.5 | 45 |

Table S3: Opposing Asymmetric Polymer Brush Fitting Parameters

| Solvent | dPS | T(Å) | dPS | dPS | P2VP ₁ | | | P2VP ₂ | | | S ₁ | | | P2VP ₂ -S ₂ | | | | |
|------------------|-----|------|------|-----|-------------------|-----|-----|-------------------|------|-----|----------------|------|-------------------|-----------------------------------|-------------------|----------------|--------|---|
| | | | SLD | SLD | T(Å) | SLD | SLD | T(Å) | SLD | SLD | T(Å) | PS | P2VP ₂ | S ₁ -S ₂ | P2VP ₁ | S ₂ | PS-Air | |
| h-Toluene | | | | | | | | | | | | | | | | | | |
| Air | 120 | 6.4 | | | | | | | | | | | | | | | | |
| Small | 430 | 250 | 3.07 | 2.1 | 1.25 | 1.7 | 1.5 | 90 | 1.82 | 100 | 1.95 | 5.80 | 5.70 | 2.4 | 80 | 28 | 7 | 1 |
| Medium | 430 | 360 | 2.90 | 2.1 | 1.25 | 1.8 | 1.9 | 95 | 1.85 | 105 | 1.95 | 5.80 | 5.70 | 2.0 | 80 | 30 | 5 | 2 |
| Large | 525 | 400 | 2.83 | 1.8 | 1.25 | 1.5 | 1.7 | 90 | 1.80 | 107 | 1.95 | 5.80 | 5.70 | 3.4 | 80 | 30 | 1 | 3 |