Supplementary information

Nanoarrays of Tethered Lipid Bilayer Rafts on Poly(vinyl alcohol) Hydrogels

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PVA coating and UV irradiation

To control the initial thickness of PVA films, 3 wt% PVA diluted with Milli-Q was spin-coated onto SiO_2 or gold substrates at 500 rpm for 5 s, followed by 2000, 3000, 4000 and 5000 rpm for 20 s. The PVA coated substrates were soft baked at 50 °C for 5 min and were then exposed under a UV lamp (365 nm, 4000 mW cm^{-2}) for various times and rinsed with Milli-Q of 50 °C for 1 min. The thickness of dry PVA films before and after 365 nm UV irradiation was determined by Alpha-Step 500 surface profiler (Tencor Instruments Inc., USA) with a scan length of 100 μm at a scan speed of 10 μm/sec.

Differential scanning calorimetry (DSC)

The glass transition temperature (T_g) of PVA was measured employing differential scanning calorimetry (DSC220CU, Seiko Instruments Inc., Japan). Dry sample (8.3 mg) with the rotary evaporator was heated from 0 to 130 °C at a heating rate of 10 °C min^{-1} under nitrogen flow (30 mL min^{-1}). The T_g of sample was determined from the DSC curve recorded in the first heating scan.

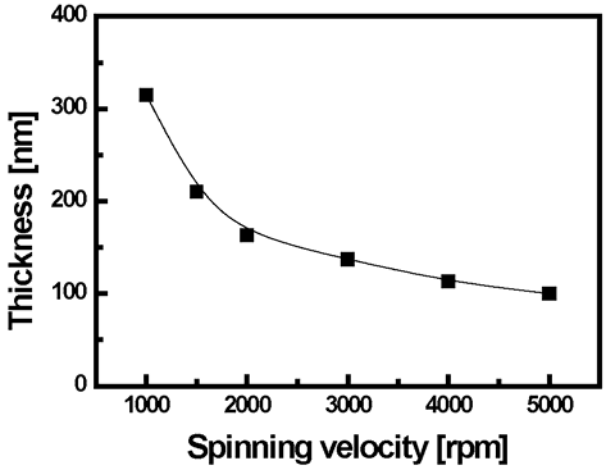

Fig. S1 Relationship between spinning velocity and thickness of 3 wt% PAV layer.

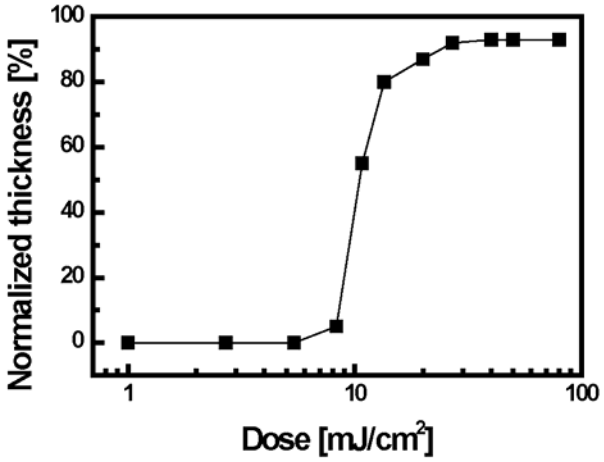

Figure S2. Relationship between UV irradiation dose and amount of formed layer. The initial thickness of PVA was 210 nm.

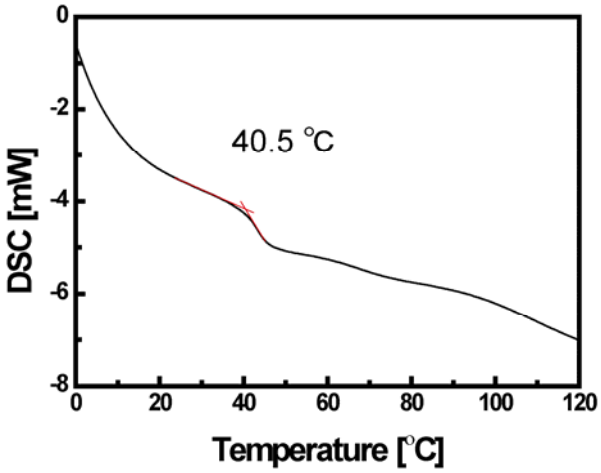

Fig. S3 DSC heat flow curve of dry PAV sample as a function of temperature.

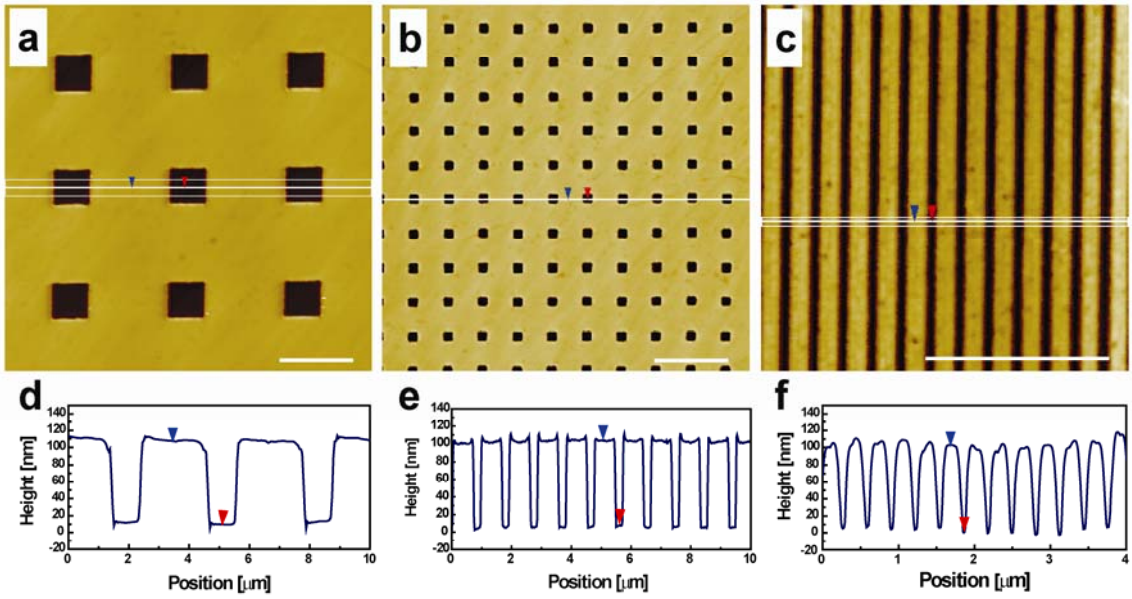

Fig. S4 (a-c) Height and (d-f) cross-sectional TM-AFM images of (a, d) 1-μm, (b, e) 300-nm and (c, f) 100-nm patterned PVA on gold substrates after mold separation in air (Scheme 1a, stage III). Scale bars: 2 μm.

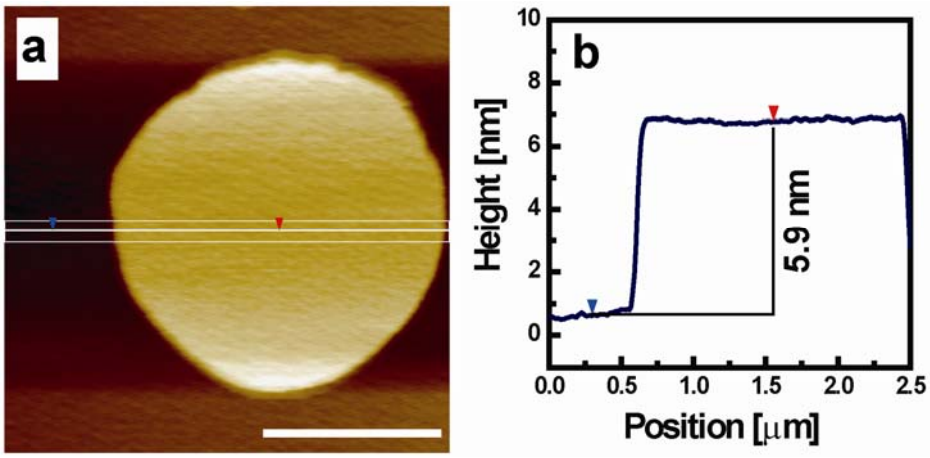

Fig. S5 (a) Planar and (b) cross-sectional AFM images of sLBMs composed of POPS/SM/cholesterol (1:1:1 molar ratio) on freshly cleaved mica in PBS. Scale bar: 1 μm.