Supplementary Information

High-throughput preparation of complex multi-scale patterns from block copolymer/homopolymer blend films

Hyungmin Park,[a] Jae-Up Kim,*[b] and Soojin Park*[a]

[a] Interdisciplinary School of Green Energy, [b] Mechanical and Advanced Materials Engineering, Ulsan National Institute of Science and Technology, Ulsan 689-798, Korea

*Corresponding authors:
Jae-Up Kim
E-mail: jukim@unist.ac.kr
Soojin Park
E-mail: spark@unist.ac.kr

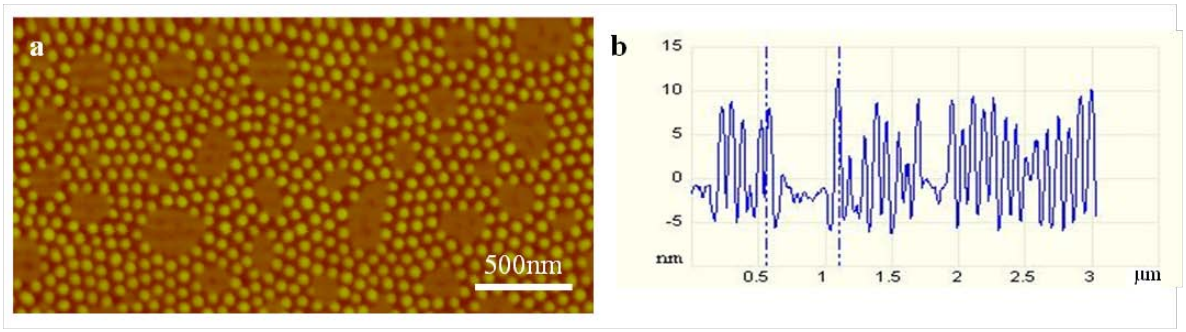

Figure S1. AFM image of PS-*b*-P2VP/PMMA (70/30, w/w) thin films spin-coated onto silicon substrates (a), and cross-sectional line scan of AFM image (b). PMMA domains having a higher surface energy than PS were depressed during the macrophase separation process.

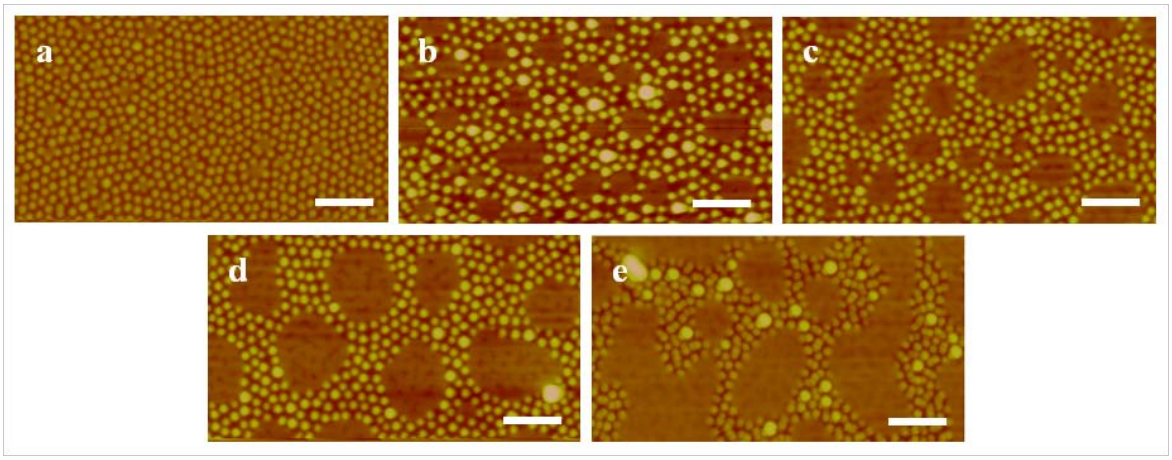

Figure S2. Height mode AFM images of PS-*b*-P2VP/PMMA thin films having PMMA composition of 10 wt% (a), 20 wt% (b), 30 wt% (c), 40 wt% (d), and 50 wt% (e) after UV exposure at 254 nm for 30 min. PS and P2VP blocks can be cross-linked by UV, but surface morphologies remained unchanged. Scale bars are 500 nm.

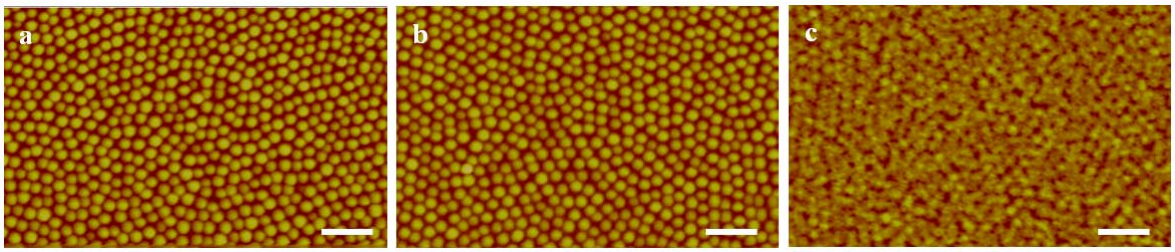

Figure S3. AFM images of PS-*b*-P2VP micellar thin films. When spin-coated micellar thin films (a) were exposed to UV at 254 nm (b), the PS and P2VP blocks were cross-linked. (c) As a control experiment, when UV cross-linked PS-*b*-P2VP films were immersed in acetic acid, the surface morphologies were not changed, but the surface roughness was decreased due to the volume contraction during cross-linking. Scale bars are 250 nm.