

Supporting information

Dewetting-induced hierarchical self-assembly of block copolymers templated by colloidal crystals

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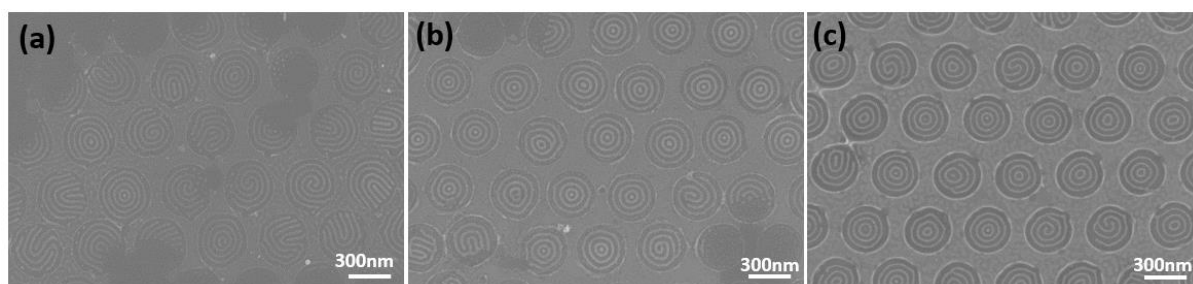


Figure S1. SEM images of dewetted block copolymer (BCP) films formed on F-SAM/PS brush-patterned substrates. F-SAM layer was prepared using various concentrations of heptadefluoro-1,1,2,2-tetrahydrodecyl trichlorosilane (HDFS) - (a) 0.1 wt.%, (b) 0.2 wt.%, and (c) 0.5 wt.%

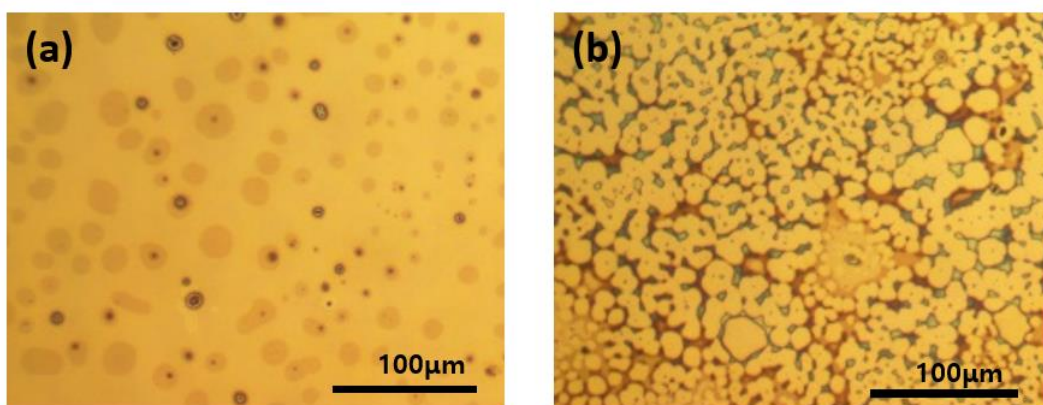


Figure S2. Optical microscopy images of BCP* film on (a) PS-brush coated substrate and (b) F-SAM deposited substrate. Toluene was used as the solvent for the BCP solution.

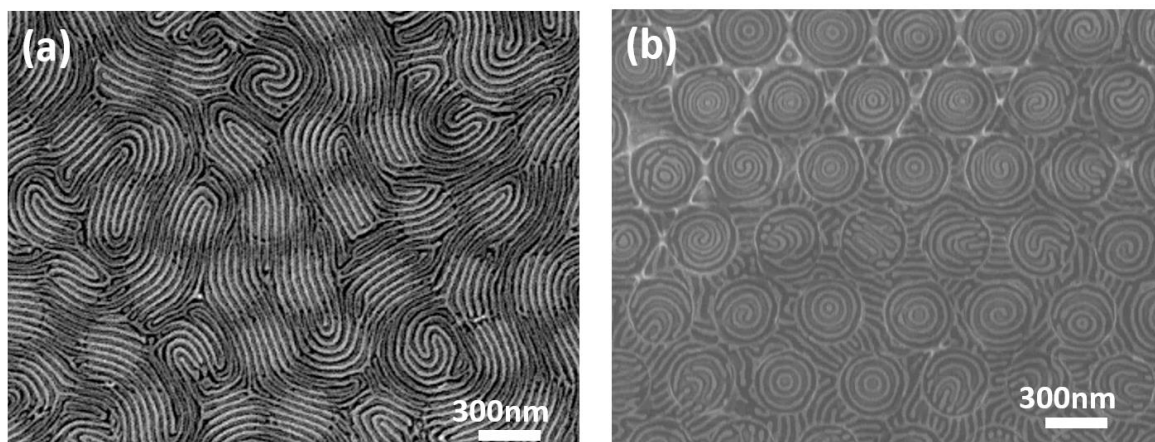


Figure S3. SEM images of BCP films spin-coated with 2.0 wt.% BCP solutions in (a) PGMEA and (b) toluene. (For comparison, see Figure 3(b), (c) with 1.5 wt.% BCP solutions)

In both samples, a bilayer of PDMS cylinders was formed as the film thickness increased. For the 2.0 wt.% BCP/toluene solution (Figure S3(b)), dewetting did not occur, and the BCP film remained in the F-SAM treated area, in contrast to that observed in the 1.5 wt.% BCP/toluene solution (Figure 3(c)).

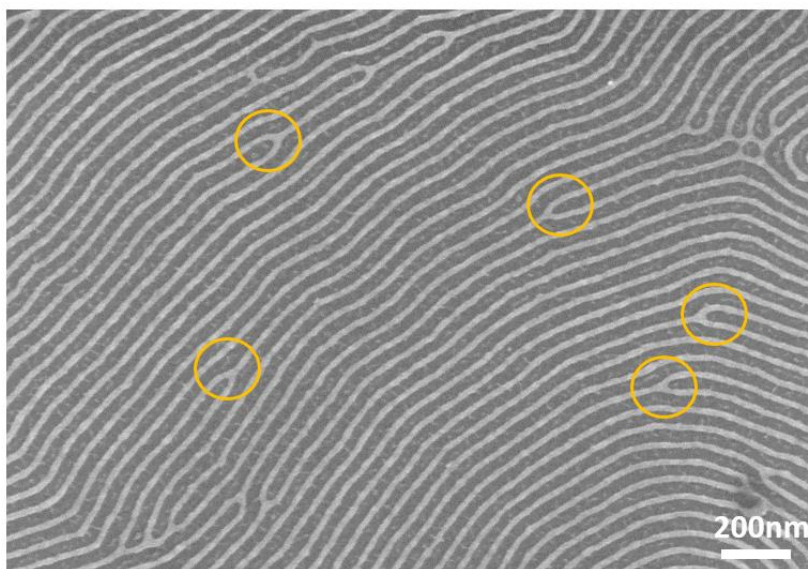


Figure S4. SEM images of Y-junctions (yellow circles) in the BCP* pattern (parallel cylinders) formed without the use of a template.

* *PS-*b*-PDMS* (*M_w*: 45.5 kg/mol, *PS* (31 kg/mol)-*b*-*PDMS* (14.5 kg/mol, SD45)