

Abstract Submitted
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Patterning of Multiple Block Copolymers per Layer with Orthogonal Processing WEI MIN CHAN, Department of Electrical Engineering, Cornell University, EVAN L. SCHWARTZ, Department of Materials Science and Engineering, Cornell University, JIN-KYUN LEE, Department of Polymer Science and Engineering, Inha University, JOAN K. BOSWORTH, Hitachi Global Storage Technologies, JOHN DEFRANCO, Orthogonal Inc, SANDIP TIWARI, Department of Electrical Engineering, Cornell University, CHRISTOPHER K. OBER, Department of Materials Science and Engineering, Cornell University — In this work we demonstrate the concept of orthogonal processing of block copolymers. By using a semi-flourinated photoresist/solvent system, we are able to selectively pattern or lift-off and then recover the block copolymer film intact. This approach can enable removable templating of self-assembly and also multiple block copolymers, morphologies or domain sizes on the same layer which can open the door to self-assembly of a wider range of geometries than possible before. We highlight the interplay between the various parameters for a successful additive and subtractive patterning and directions for further theoretical investigation as well as the limitations of this technique.

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