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Registration of Lamellar Microdomains of PS-b-PMMA to Topographic Guiding Patterns SANG-MIN PARK, CHARLES RETTNER, JED PITERA, HO-CHEOL KIM, IBM Almaden Research Center — In addition to the control over orientation and lateral alignment, the control over precise placement of microdomains is critical for block copolymer lithography. We report here an approach for spatial registration of the lamellar microdomains of poly(styrene-b-methly methacryalte) (PS-b-PMMA) using topographic guiding patterns prepared by E-beam lithography. By employing two levels of topographic patterns, we could achieve both alignment and registration of lamellae on surface. Details on the limitations and challenges of this approach will be addressed along with potential applications to device fabrications. A mean field Monte Carlo simulation on an IBM BlueGene/L which provides additional structural insights into the influence of the topographic guiding patterns will be presented as well.

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