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Controlled Ordering of Long-range Perpendicular Lamellae by Block Copolymer Self-assembly DU YEOL RYU, KYUNGINN KIM, SUNG-MIN PARK, YEONGSIK KIM, Yonsei Univ, YONSEI UNIV TEAM — We introduce a simple approach to fabricating highly stable, perpendicularly oriented lamellae through the self-assembly of high-molecular-weight polystyrene-b-poly(methyl methacrylate) (PS-b-PMMA). The desired morphology was achieved over a narrow annealing period (5 10 min) under solvent vapor, since the SVA process need to terminate immediately before the saturated BCP films begin to dewet the substrate. This narrow processing period impeded practical applications to continuous industrial processes. A controlled SVA process at a selected temperature gap was found to show the excellent long-term stability, at which highly ordered line-arrays of perpendicularly oriented lamellae were confined to topographic line patterns.

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