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Soft molding to align cylindrical nanodomains of block copolymers[1] HIDEAKI YOKOYAMA, LEI LI, AIST — Block copolymers are a class of materials that self-assemble into ordered periodic nanostructures. However, we often find that such spontaneous self-assembly ends up with disappointing randomly oriented polygrain structures, which limit the application of the nanodomains. Soft molding is a unique technique to transfer topological pattern with a soft mold, which permits a conformal contact with surfaces. A soft mold with a periodic topological pattern is embossed on the block copolymer thin films. The soft molding not only replicates the topological pattern to the block copolymer thin films but also induces microscopic flow in block copolymer thin films and controls the orientation of cylindrical domains. We fabricated a single layer of 3×10^5 parallel cylindrical nanodomains over an area of 1 cm $\times$ 1 cm.

[1]The New Energy and Industrial Technology Development Organization (NEDO)

Hideaki Yokoyama
AIST

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