

A simple fabrication of metal nanodot array in self-assembled diblock copolymer templates

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Recently, various nanopatterning technologies have been developed, which aim for well-ordered nanostructures over large areas. Diblock copolymer is fascinating material for that purpose. A self-assembly property of diblock copolymer makes it possible to provide diverse high-density nanostructures over large dimensions with low cost. In particular, asymmetric diblock copolymer PS-*b*-PMMA offers hexagonally ordered high-density nanoporous templates to fabricate metal nanodot array. Here we demonstrate a simple process to produce an array of metal nanodots by using asymmetric diblock copolymer thin film which shows cylindrical phase separation morphology. We also present the control of nanodot dimensions by adjusting molecular weight of diblock copolymer.