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**Directed Self-Assembly of Block Copolymers in Thin Films on Polymer Nano-Stripes** DONG-EUN LEE, HO-JONG KANG, DONG HYUN LEE, Dankook University, NANO FUNCTIONAL MATERIALS LAB. TEAM — In this study, we report directed self-assembly (DSA) of block copolymers in thin films on nano-stripes of polymers. Unique nano-stripes of poly(tetrafluoro ethylene) (PTFE) having ˜20 nm of amplitude and ˜200 nm of pitch were simply generated by physically rubbing a PTFE bar on various substrates like Si wafers, glass, and polyimide due to its low friction coefficient and high wear rate. The resulting nano-stripes were extremely oriented along the rubbing direction. Then, various asymmetric polystyrene-*block*-poly(2-vinylpyridine) copolymers (PS-*b*-P2VP) were directly self-assembled on the nano-stripes of PTFE by solvent-annealing in vapor of tetrahydrofuran (THF). As a result, PS-*b*-P2VP exhibited extremely ordered P2VP cylinders oriented normal to the surface in large area on the underlying nano-stripes of PTFE. In addition, as utilizing the BCPs as templates, hexagonal arrays of metal nanoparticles were generated in large area for further application. BCP thin films and arrays of metal nanoparticles were characterized by atomic force microscopy (AFM) and scanning electron microscopy (SEM).

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