

Abstract Submitted  
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**Spatial position control of nanofeatures assisted by nanoporous templates fabricated by block copolymer based lithography** DONG HYUN LEE, DONG-EUN LEE, Dankook Univ — Herein, we demonstrated a unique method to control spatial arrangement of nanostructures by using topographically patterned substrates. The thin films of block copolymers (BCPs) were firstly prepared on a thin layer of poly(vinyl alcohol) (PVA). Then to induce ordering of the BCPs, the thin films were solvent-annealed in organic solvent vapors. The BCP thin films were then utilized as a mask to fabricate ordered PVA nanopores by reactive ion etching. Different types of BCP micelles were sequentially spin-coated on the nanoporous PVA film. Interestingly, the BCP micelles having hydrophobic surface could immediately be self-assembled due to synergetic effects of surface energy difference and height contrast of the PVA film during evaporation of a suspension solvent. In addition, by combining topographically patterned substrates, long-range lateral ordering of BCP micelles depending on inter-distance and diameter of the PVA nanopores were effectively achieved over whole surface area.

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