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Block Copolymer Nanotemplates for Biomolecular Arrays JUNG HYUN PARK, YALE E. GOLDMAN, RUSSELL J. COMPOSTO, NBIC, University of Pennsylvania — The controlled positioning of biomolecules on surfaces is important for applications such as high-throughput proteomic arrays as well as fundamental biological research. However, the development of biomolecule arrays requires well-ordered nanosize platforms. The perpendicular lamellar structure of diblock copolymer films deposited on silicon substrates is a good candidate as a nanotemplate because of their spatial dimensions and orientation. Using scanning probe microscopy, a nearly symmetric poly(styrene-b-methyl methacrylate) P(S-b-MMA) diblock copolymer spin coated on silicon and annealed at 175 $^\circ$C for 2 days exhibits a perpendicular lamellar morphology with a periodicity of 70nm. To further constrain biomolecules or proteins, topographical variations were etched into the film by exposure to UV radiation for varying times. This exposure was found to preferentially etch the MMA phase resulting in "trenches" of MMA stripes separated by hills of PS. Studies are underway to investigate the controlled attachment of biomolecules on both the perpendicular lamellar morphology and the same morphology with trenches.

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