

Abstract Submitted  
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**Block copolymer adsorbed layers on solids.**<sup>1</sup> MANI SEN, Materials Science and Engineering (MSE), Stony Brook University (SBU), NY, NAISHENG JIANG, MSE, SBU, NY, BHOJE GOWD, CSIR-NIIST, India, MAYA ENDOH, TADANORI KOGA, MSE, SBU, NY — Block copolymer thin films offer a simple and effective route to fabricate highly ordered periodic microdomain structures. The fundamental, yet unsolved question is whether these highly oriented microdomain structures persist even near an impenetrable solid wall. We here report the adsorbed structures of polystyrene-block-poly (4-vinylpyridine) (PS-*block*-P4VP,  $M_w = 41,000$ , PS (weight fraction=0.81) formed on planar silicon substrates. Perpendicularly aligned cylindrical microdomains were created by solvent vapor annealing (Gowd et al., *Soft Matter*, 2014, 10, 7753), and the adsorbed layer was derived by solvent leaching with chloroform, a good solvent for the polymers and thereafter characterized by using atomic force microscopy, scanning electron microscopy, grazing incidence small angle x-ray scattering, and x-ray reflectivity. The results showed that both PS and P4VP chains lie flat on the substrate, forming a microphase-separated structure (MSS) without long-range order. Moreover, a spin-coated PS-*block*-P4VP thin film annealed under vacuum at 190 C showed similar MSS on the substrate, indicating the generality of the interfacial polymer structure. Details will be discussed in the presentation.

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