Supporting Information

Pattern Formation of Metal-Oxide Hybrid Nanostructures via the Self-Assembly of di-Block Copolymer Blends

Dae Soo Jung^a[†], Jiwon Bang^a[†], Tae Wan Park^a, Seung Hyup Lee^a, Yun Kyung Jung^b, Myunghwan Byun^c, Young-Rae Cho^d, Kwang Ho Kim^{*d,e}, Gi Hun Seong^{*f}, and Woon Ik Park^{*a}

^aElectronic Convergence Materials Division, Korea Institute of Ceramic Engineering & Technology (KICET) 101 Soho-ro, Jinju 52851, Republic of Korea

^bDepartment of Biomedical Engineering, Inje University, 197 Inje-ro, Nam-Gu, Kimhae, Republic of Korea

^cDepartment of Advanced Materials Engineering, Keimyung University, 1095 Dalgubeol-daero, Daegu 42601, Republic of Korea \

^dDepartment of Materials Science and Engineering, Pusan National University (PNU), Pusan 46241, Republic of Korea

eGlobal Frontier R&D Center for Hybrid Interface Materials, Busan 46241, Republic of Korea

^fDepartment of Bionano Engineering, Hanyang University, Ansan 15588, Republic of Korea

⁺These authors contributed equally.

KEYWORDS: block copolymer, self-assembly, blend, metal-oxide, hybrid nanostructure

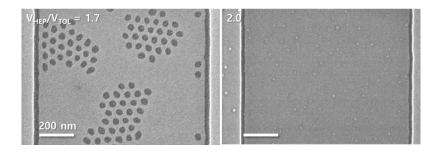


Figure S1. Self-assembled cylinder-forming DS45 BCP after annealing with a binary solvent of toluene and heptane. A Mixed BCP morphology of HPL and lamella was observed when $V_{\text{HEP}}/V_{\text{TOL}} = 1.7$ (left), while a pure lamellar structure was formed when $V_{\text{HEP}}/V_{\text{TOL}} = 2.0$ (right).

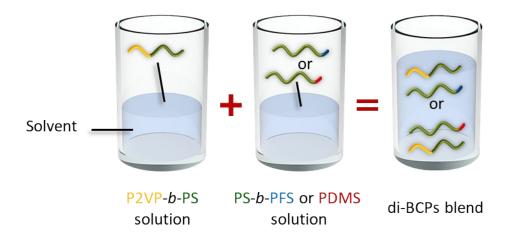


Figure S2. Blending of di-BCPs dissolved in toluene. Majorty blocks of all of the di-BCPs are identical to the PS block; thus di-BCPs can be easily dissolved in toluene, which is a good solvent for PS. All of the di-BCP solutions were blended at a one-to-one ratio.