# Functionalization of Three-Dimensional Block Copolymer Nanostructures

이원무, 정희태†
한국과학기술원
(heetae@kaist.ac.kr†)

Metallization of a polystyrene-block-poly(2-vinylpyridine) (PS-b-P2VP) block copolymer produced three dimensional nanostructures consisting of Pt-infused P2VP cylinders in a PS matrix via a single step process. The Pt is introduced from an aqueous chloride solution and penetrates through 100s of nm thickness of the microphase-separated PS-b-P2VP to form multilevel metallized nanostructures. The metallization process replicated the through-thickness transition from in-plane to out-of-plane oriented P2VP cylinders produced by solvent annealing. Oxygen plasma etching removed the PS majority block and promoted crystallization of the Pt into nanoparticles forming cylindrical nanocrystalline assemblies.