

Abstract Submitted  
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**Vertical Diblock Copolymer Cylinder-Nanorod Nanocomposites** BORIS RASIN, HUIKUAN CHAO, XINGCHEN YE, YAOTING WU, Univ of Pennsylvania, JEFFREY METH, DuPont Co., CHRISTOPHER MURRAY, ROBERT RIGGLEMAN, RUSSELL COMPOSTO, Univ of Pennsylvania — Nanocomposites consisting of nanorods in a diblock copolymer film with a vertical cylinder structure are investigated. The diblock copolymer film is poly(styrene-*b*-2-vinylpyridine) (PS-*b*-P2VP) with vertical P2VP cylinders in a PS matrix. The nanorods in the PS-*b*-P2VP film are gold nanorods functionalized with a variety of ligands. The nanocomposite film is prepared by spin-coating and solvent annealing a solution of PS-*b*-P2VP and gold nanorods. The position and orientation of the gold nanorods in the PS-*b*-P2VP film is studied as system parameters are varied. Parameters varied include nanorod dimensions, nanorod concentration and the ligand with which the nanorods are functionalized. Field theoretic simulations are used to guide the experiments and interpret the results.

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