

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Phase Transformation of Self-Assembled Nanostructure of PS-P2VP/HAuCl<sub>4</sub> Hybrid System**<sup>1</sup> CHI-AN DAI, Department of Chemical Engineering and Institute of Polymer Science and Engineering, National Taiwan University, CHUN-JIE CHANG, YI-HUAN LEE, WEI-FANG SU, Institute of Polymer Science and Engineering, National Taiwan University — In this study, we investigated the effect of the addition of chloroauric acid (HAuCl<sub>4</sub>) in polystyrene-*b*-poly(2-vinyl pyridine) (PS-P2VP) on the morphology and phase transformation of the mixture system. Nanostructure of ordered array of spheres, cylinders, gyroids, lamellae as well as different shapes of micellar phases of the system can be obtained by choosing appropriate PS-P2VP diblock copolymer, by changing molar ration of the gold salt to the copolymer, and by choosing different solvents. The phase diagram of the hybrid system are determined and related to intermolecular interactions on nano- and mesoscopic scale. The self-assembled nanostructure is characterized by TEM, WAXS and SAXS.

<sup>1</sup>Support from National Science Council of Taiwan under contract number of NSC 95-2120-M-002-004 is greatly appreciated.

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Date submitted: 29 Dec 2006

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