Supporting Information

Simultaneous Blue, Green, and Red Emission from Diblock Copolymer Micellar Films: A New Approach to White-Light Emission

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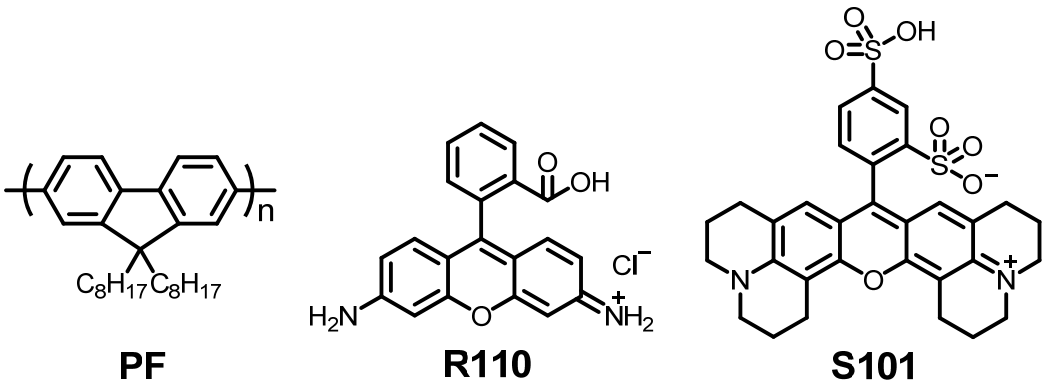

Figure S1. Chemical structures of PF, R110, and S101.

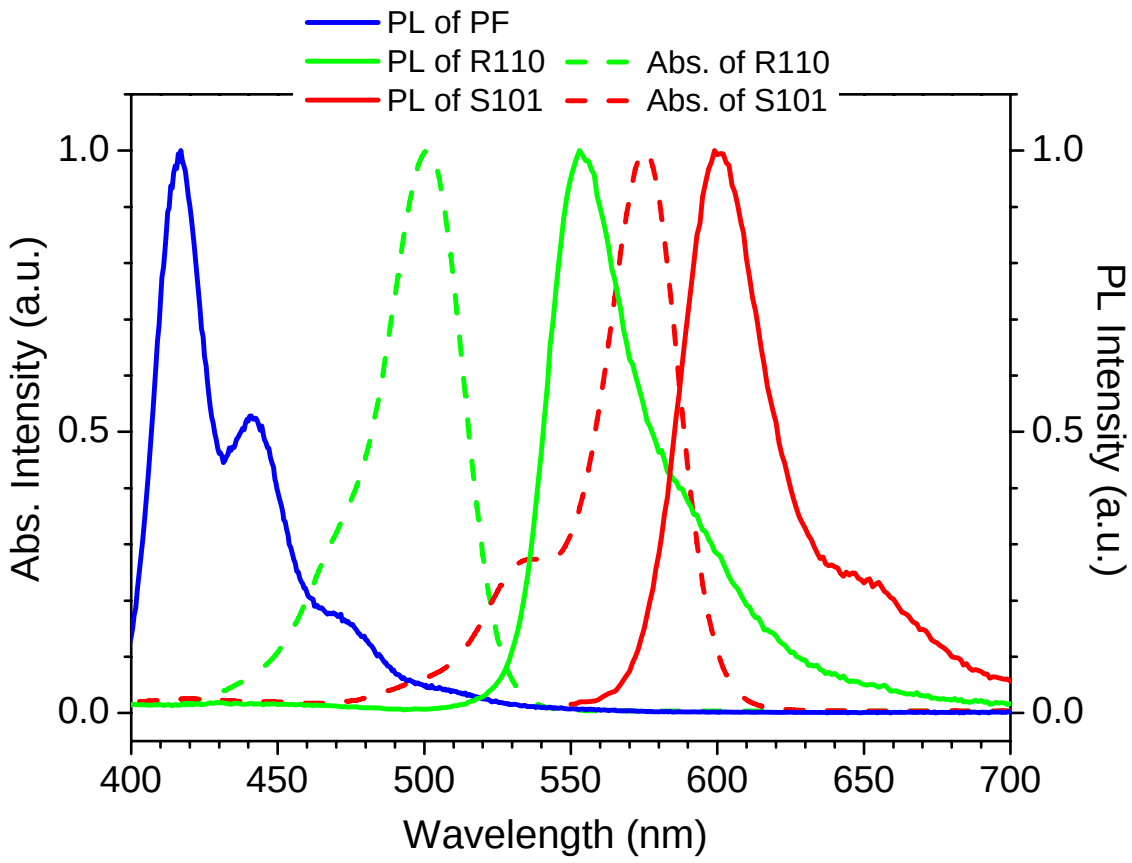

Figure S2. Normalized PL and UV-Vis absorption spectra of PF in toluene and fluorescent dyes (R110 and S101) in ethanol. The excitation wavelength was 380 nm.

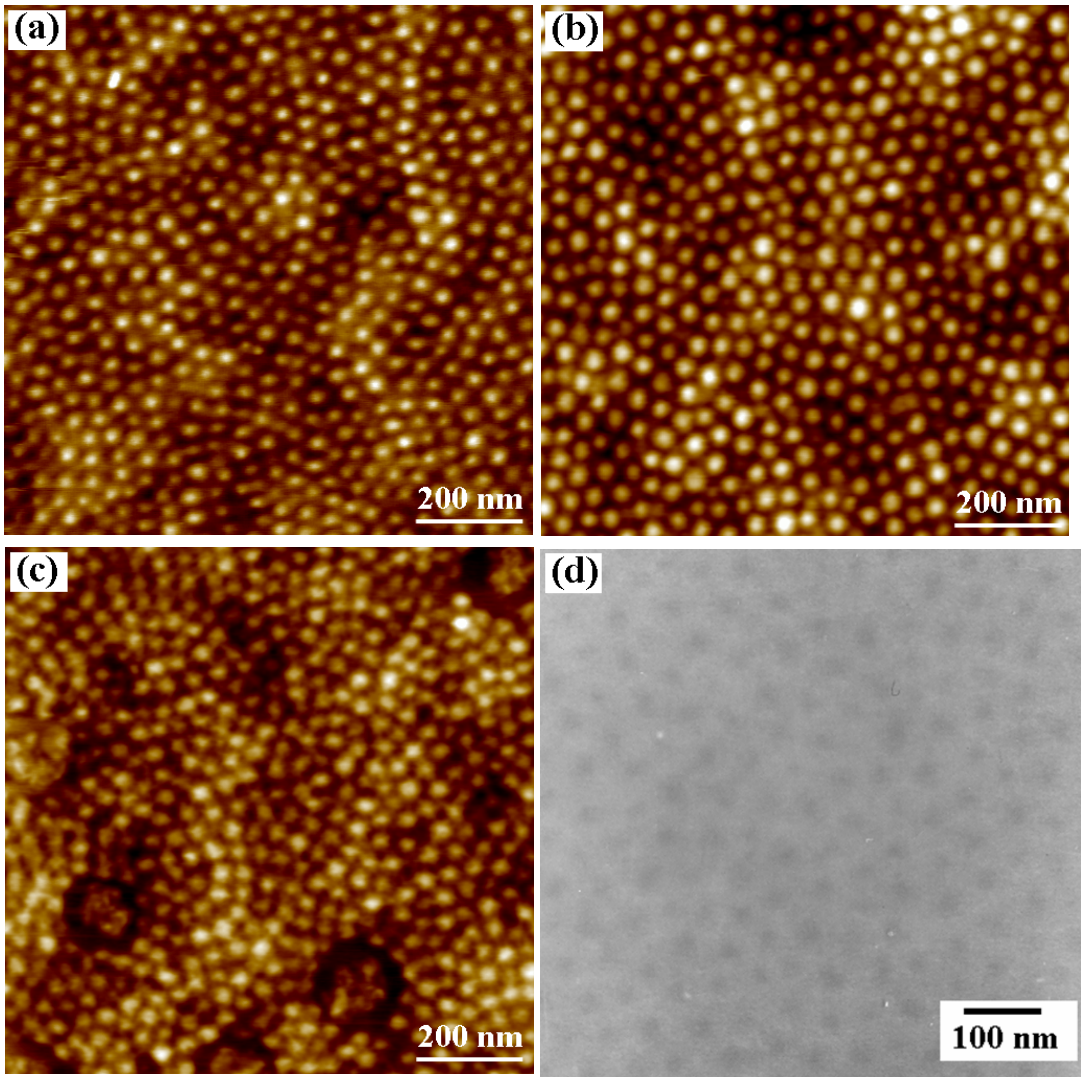

Figure S3. AFM images of (a) a neat PS-*b*-P4VP micellar thin film, (b) a PS-*b*-P4VP/R110 hybrid film, and (c) a PS-*b*-P4VP/S101 hybrid film. (d) The corresponding TEM image of Figure S3(b).

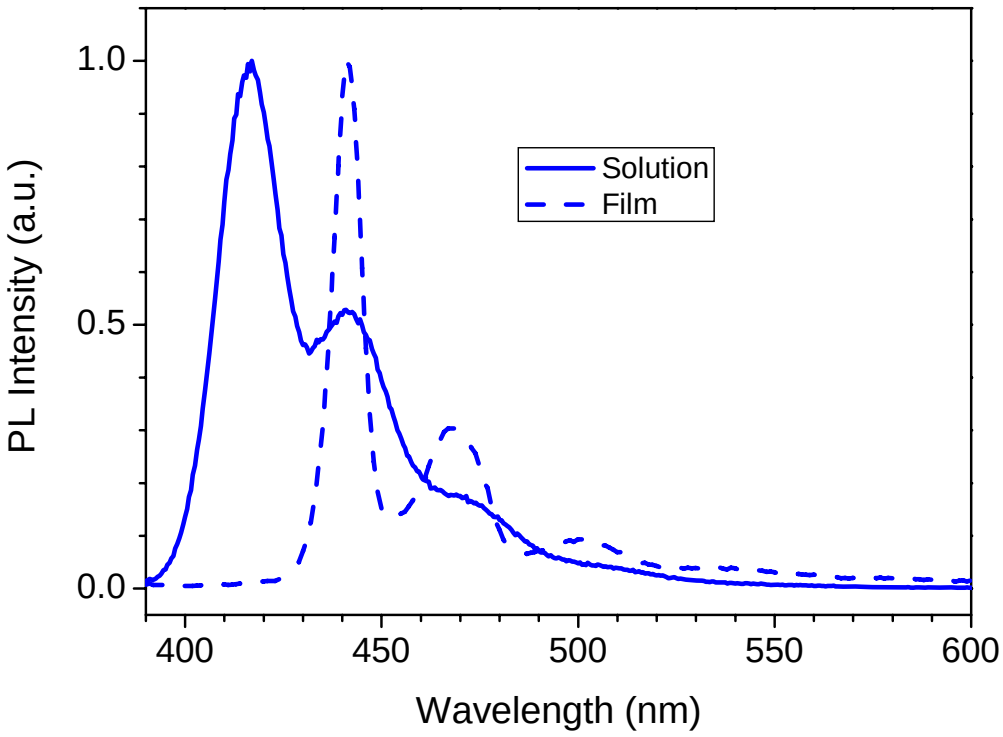

Figure S4. Normalized PL spectra of PF in toluene solution and in solid state. The excitation wavelength was 380 nm.

Experimental

Poly(styrene-block-4-vinyl pyridine) (**PS-*b*-P4VP**, $M_{n,PS}$ = 47 600 g/mol, $M_{n,P4VP}$ = 20 900 g/mol, M_w/M_n = 1.14) was purchased from Polymer Source, Inc. Rhodamine 110 chloride (**R110**) and sulforhodamine 101 (**S101**) were purchased from Sigma-Aldrich and were used as received. **PF** ($M_{n,}$ = 32 500 g/mol, M_w/M_n = 1.83) used in this work was synthesized according to the literature (U. Scherf, E. J. W. List, *Adv. Mater.* 2002, *14*, 477.)

PS-*b*-P4VP was dissolved in toluene with a concentration of 2 wt%. To prepare fluorescent dye-loaded micellar solutions, each fluorescent dye was added to a separate **PS-*b*-P4VP** micellar solution with prolonged stirring (~ 3 days) to ensure complete loading of the dye molecules into the **P4VP** cores. The molar ratios of **R110** and **S101** to **4VP** units were controlled to be 0.008 and 0.010, respectively, where a reasonably distinct fluorescence was observed. For simultaneous emission, **PF** toluene solution (10^{-4} wt%), **R110**-loaded micellar solution, and **S101**-loaded micellar solution were mixed with a certain ratio and the blended solution was spin-coated at 2000 rpm for 60 s or solvent-cast onto quartz or silicon substrates. Prior to spin-coating, the silicon substrates were cleaned with a 70/30 v/v solution of 98% H_2SO_4/ 30% H_2O_2 at 80 °C for 30 min, and then thoroughly rinsed with deionized water and dried.

AFM images were obtained using a Digital Instruments MultiMode IV in the tapping mode with an Olympus cantilever (spring constant in the range 33.2-65.7 N m^{-1} and resonant frequency of 277.3-346.3 kHz). PL spectra were measured using an EDINBURGH instrument at an excitation wavelength of 380 nm. All measurements were performed at room temperature.