

Gold-loaded microspheres via carbosilane-thioether dendrimers as stabilizer and their performance in layer-controllable photonic crystals

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Supplementary Figures

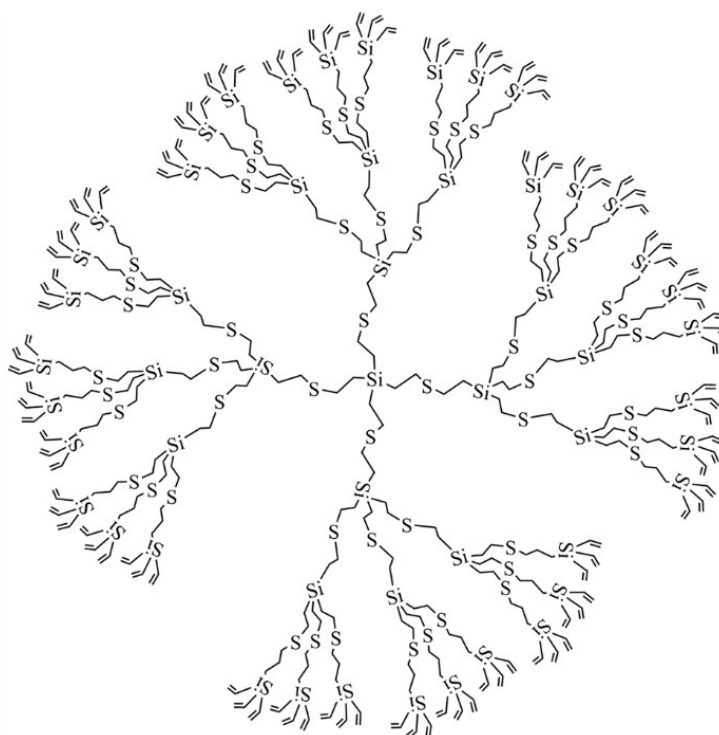


Fig S1. Chemical formula of third generation carbosilane-thioether vinyl-terminated (G3-Vi) dendrimer

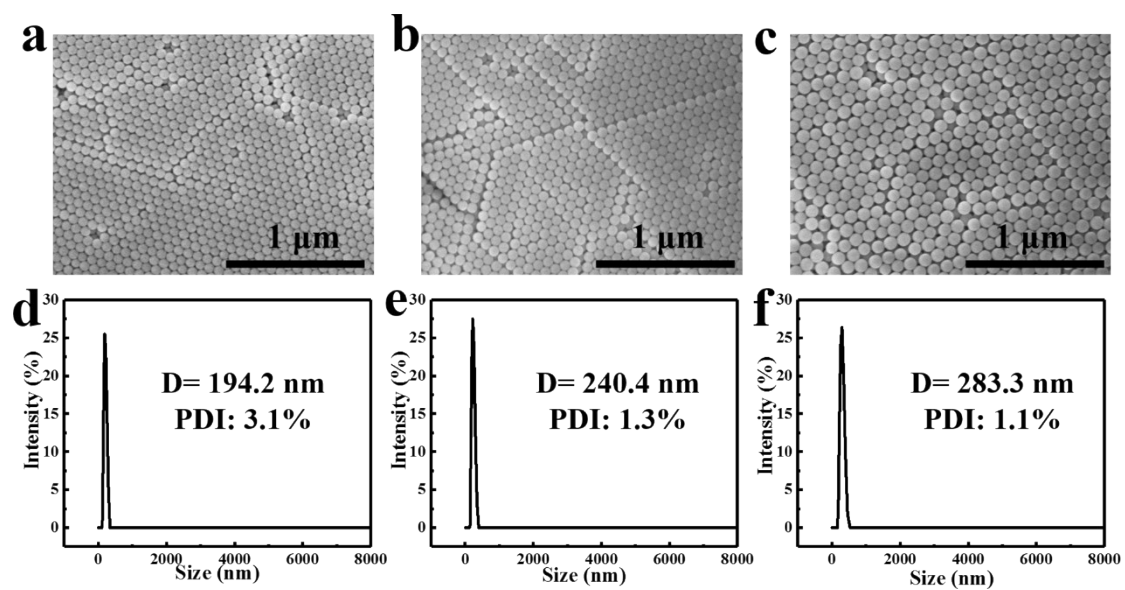


Fig S2. SEM images and size distribution curves of P(St-co-G3Vi) microspheres with diameters of 194.2 nm (a, c), 240.4 nm (b, e), 283.3 nm (c, f).

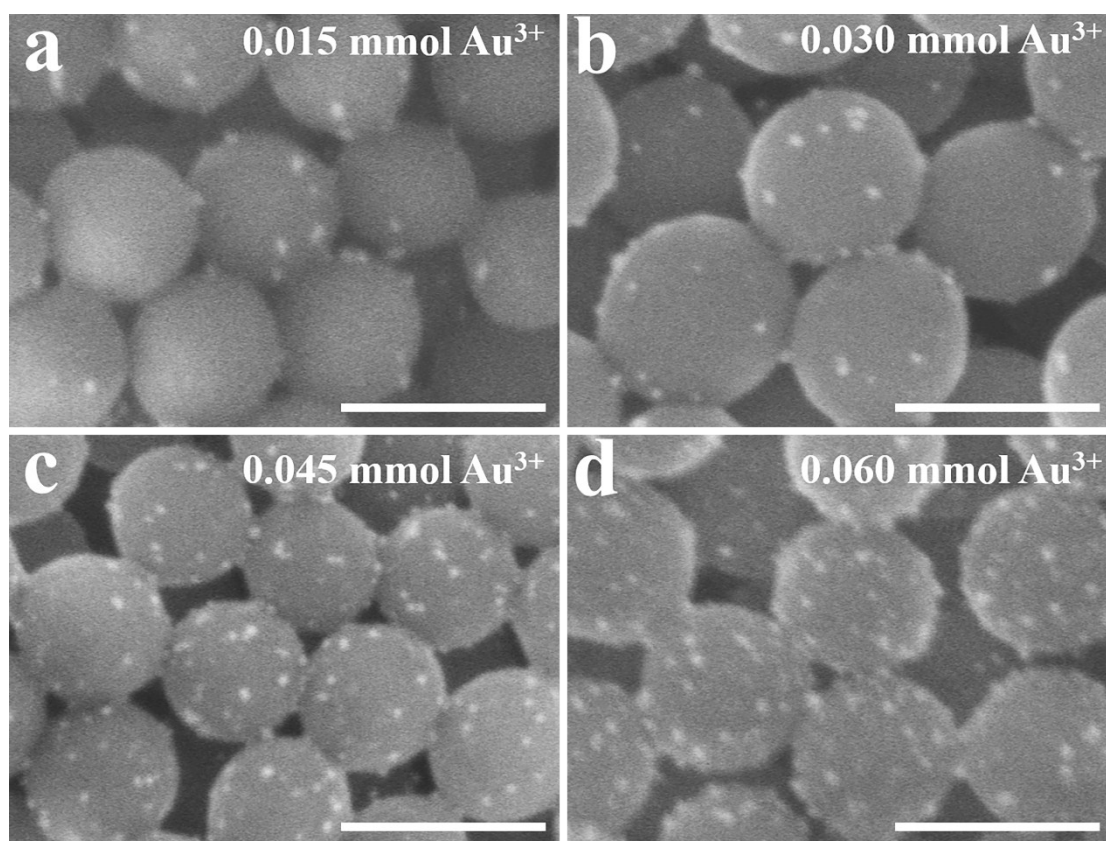


Fig S3. SEM images of P(St-co-G3Vi)/Au microspheres with different amount of Au³⁺. Scale bar: 200 nm.

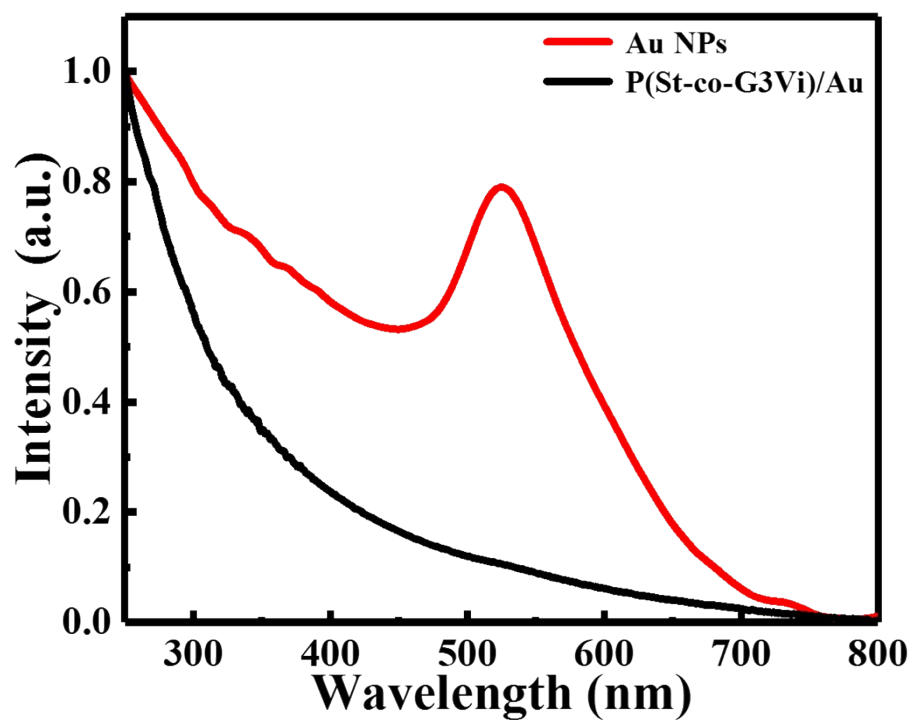


Fig S4. UV-vis spectra of Au nanoparticles and P(St-co-G3Vi) microspheres.

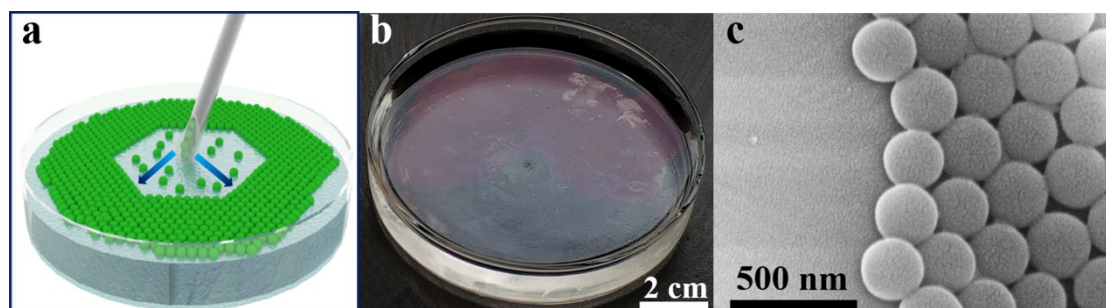


Fig S5. (a) Schematic illustration of Langmuir-Blodgett method. (b) Optical photograph of 2D monolayer PC on the surface of water. (c) Cross-sectional SEM image of 2D monolayer PC assembled with P(St-co-G3Vi) microspheres.

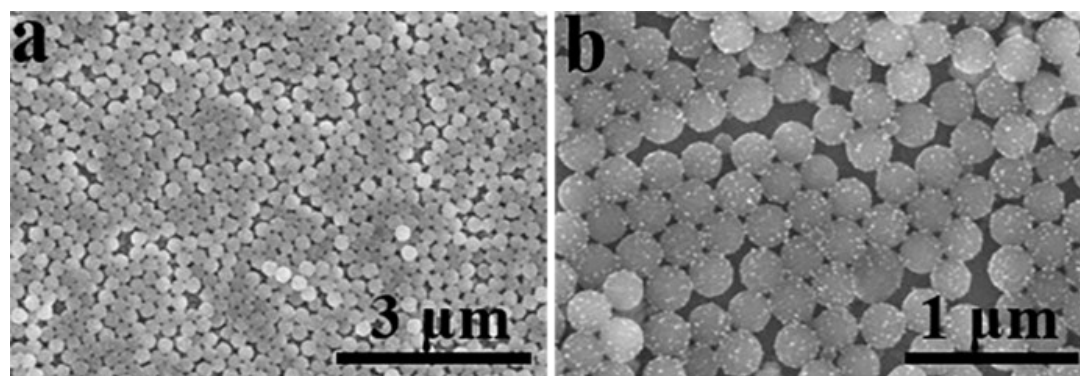


Fig S6. SEM images of 2D monolayer PC assembled with P(St-co-G3Vi)/Au

composite microspheres.

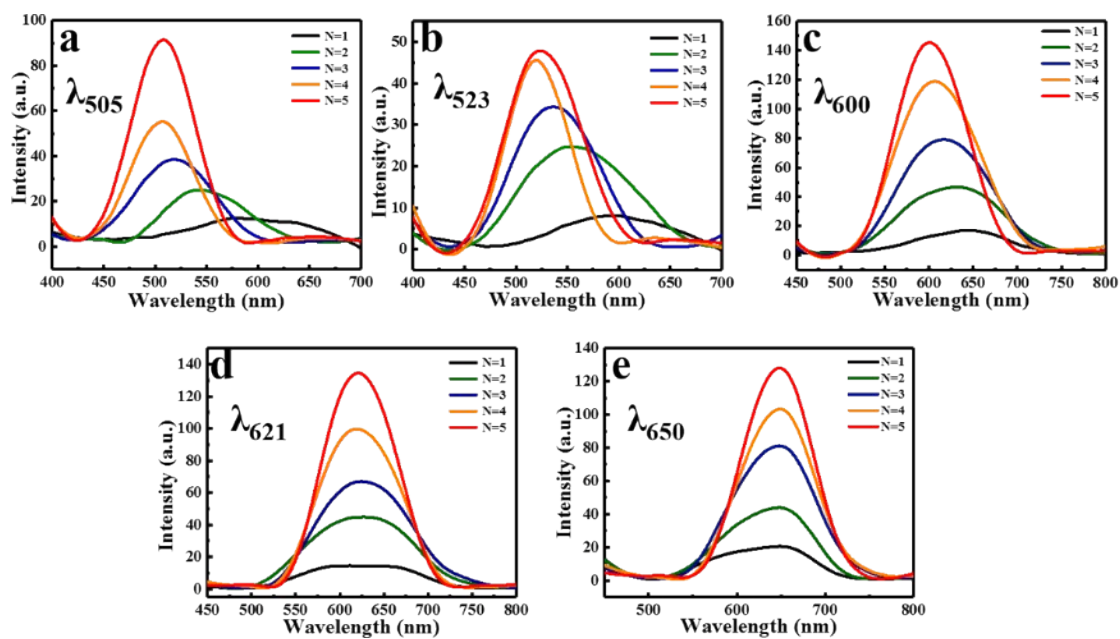


Fig S7. Reflection spectra of various layer-number PC at wavelength of 505 nm (a), 523 nm (b), 600 nm (c), 621 nm (d) and 650 nm (d).

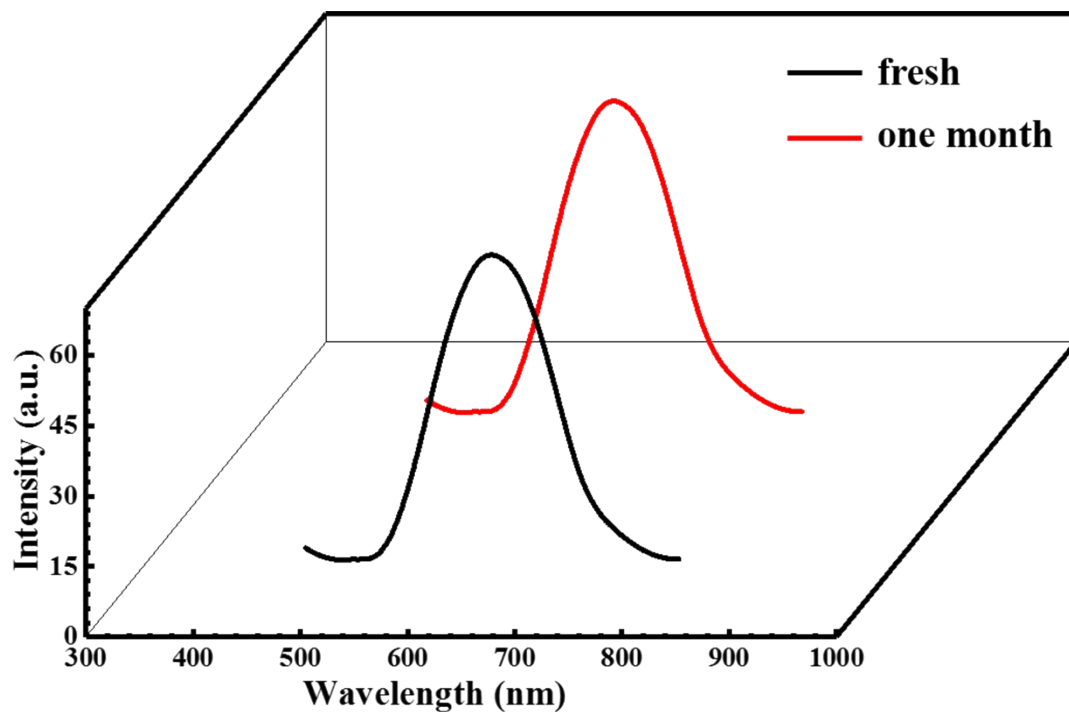


Fig S8. Reflection spectra of fresh PC film constructed with P(St-co-G3Vi)/Au microspheres and stored for one month

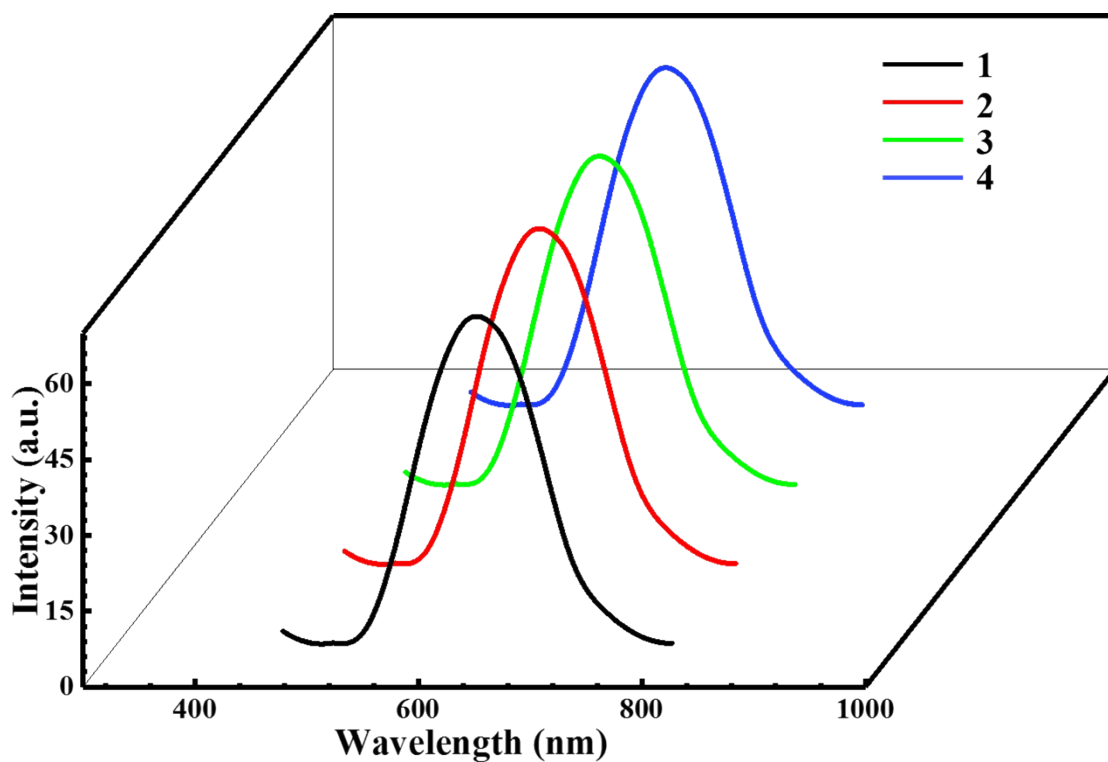


Fig S9. Reflection spectra of PC films constructed with same P(St-co-G3Vi)/Au microspheres by combining Langmuir-Blodgett method and layer-by-layer strategy in different batches.

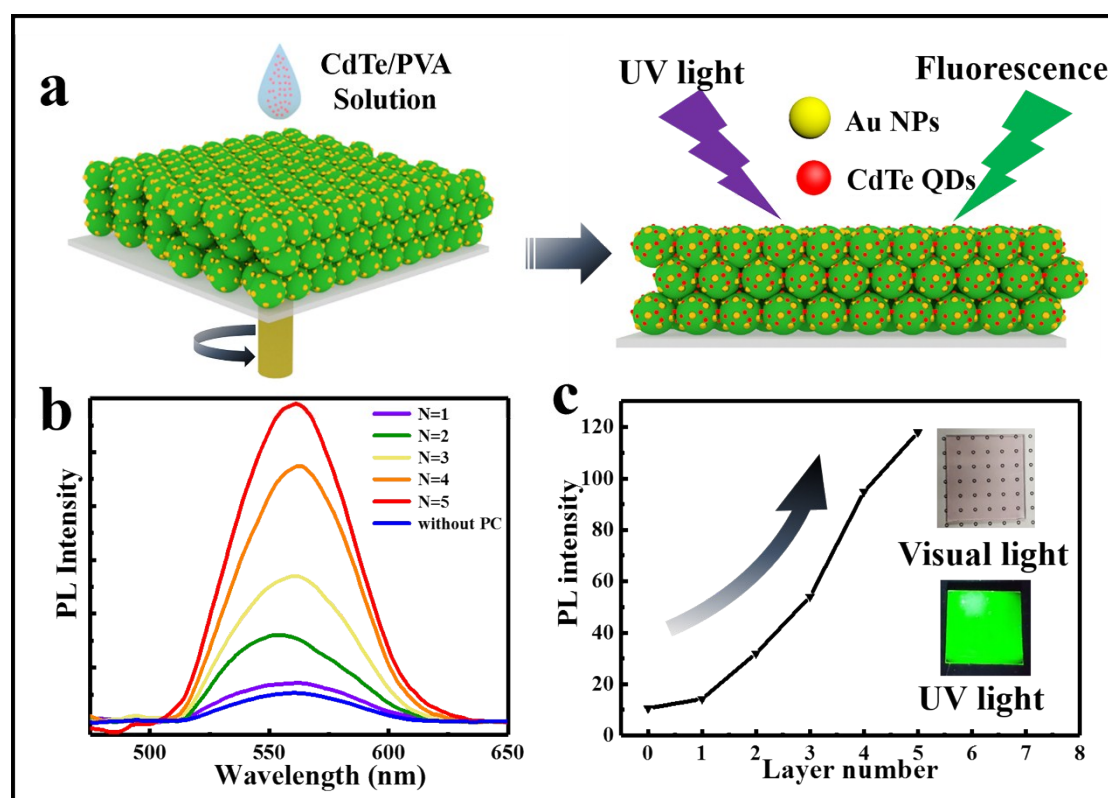


Fig S10. (a) Schematic illustration of construction of QD/PC heterogeneous film. (b) PL spectra of various heterogeneous film with different stacking numbers. (c) The correlation between PL intensity and layer numbers, insets: Optical photographs of the heterogeneous film under visual light and UV light.