

Supporting Information

Dendrimer-induced colloids towards robust fluorescent photonic crystal films and high performance WLED

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In this paper, water-soluble CdSe@ZnS QDs were fabricated by ligand exchange. Typically, 1 g of N-Acetyl-L-cysteine were added into a 50 mL three-neck round flask with 20 mL water as solvent, then 5 mL (0.5M) CdSe@ZnS QDs dissolved in methylbenzene were added to the flask. The mixture were kept stirring for 12 h under a nitrogen atmosphere and the CdSe@ZnS QDs were transferred to the water layer. Finally, the water layer was filtrated by a nylon syringe filter to obtain the aqueous CdSe@ZnS QDs solution.

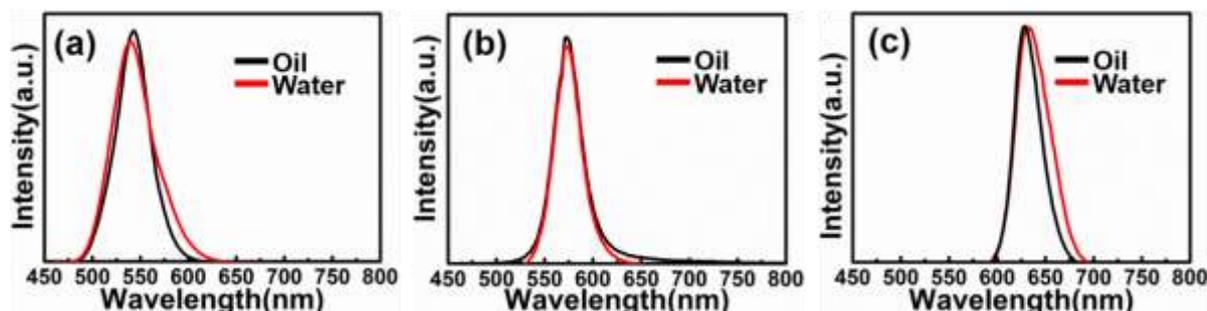


Fig. S1 (a) PL spectra of the CdSe@ZnS QDs centered at 540 nm before (black) and after (red) ligand exchange (b) PL spectra of the CdSe@ZnS QDs centered at 570 nm before (black) and after (red) ligand exchange (c) PL spectra of the CdSe@ZnS QDs centered at 630 nm before (black) and after (red) ligand exchange

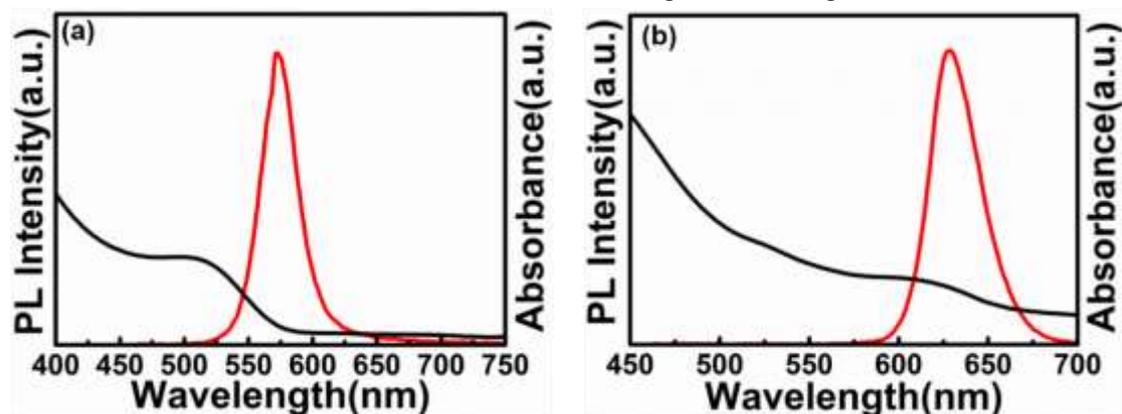


Fig. S2 (a) UV-vis absorption of the CdSe@ZnS hybrid latexes centered at 530nm and

PL spectra of the CdSe@ZnS hybrid latex centered at 570nm (b) UV-vis absorption of the CdSe@ZnS hybrid latexes centered at 600nm and PL spectra of the CdSe@ZnS hybrid latex centered at 630nm

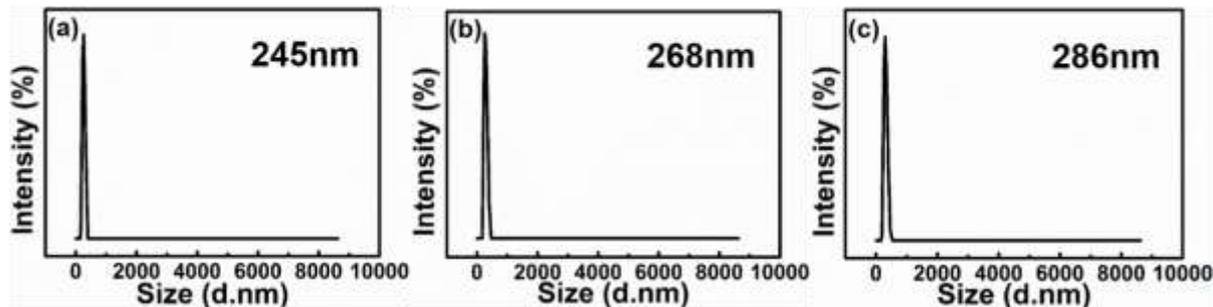


Fig. S3 The dynamic light scattering (DLS) measurements demonstrate P(St-MMA-AA) microspheres with diameter of (a) 245nm (polydispersity indices(PDI), 0.017), (b) 268nm (polydispersity indices(PDI), 0.023) and (c) 286nm (polydispersity indices(PDI), 0.021)

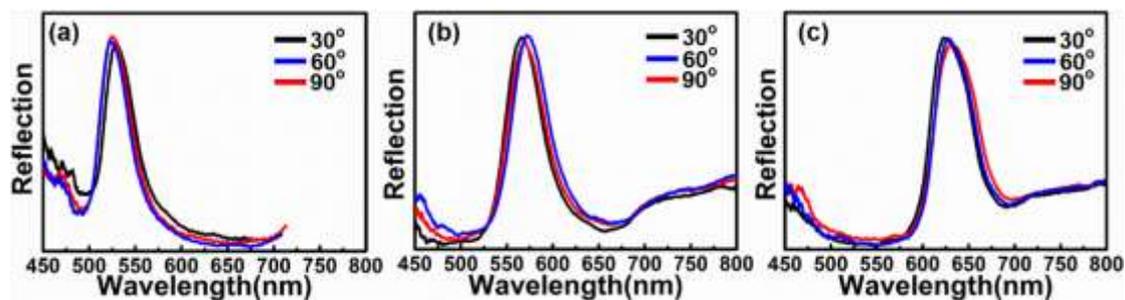


Fig. S4 Reflection spectra of PC beads taken at different viewing angles (30°, 60° and 90°). (a) green PC beads (b) yellow PC beads (c) red PC beads.

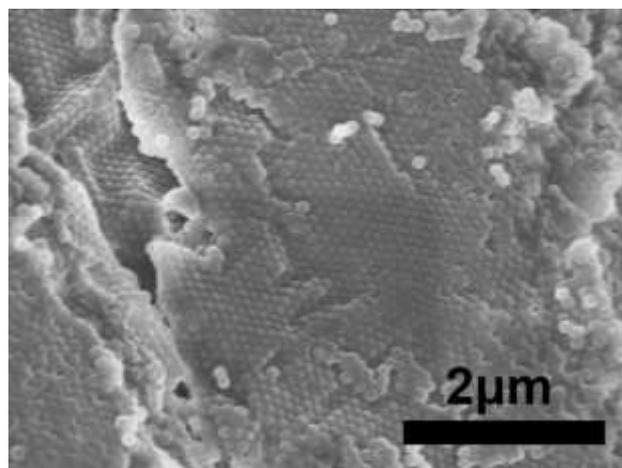


Fig. S5 Cross-sectional SEM image of a PC bead with green structural color.

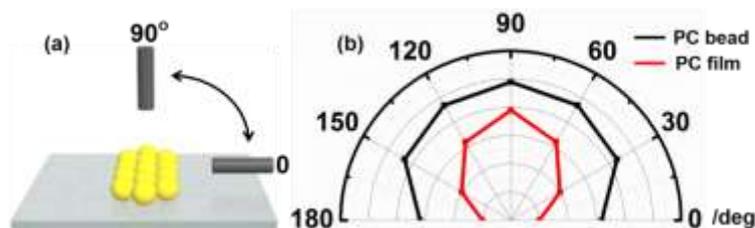


Fig. S6 (a) Schematic illustration of the fluorescent intensity taken at different detection

angles. (b) Normalized fluorescent intensity of the PC beads (black line) and flat PC film (red line) as a function of detecting angles.

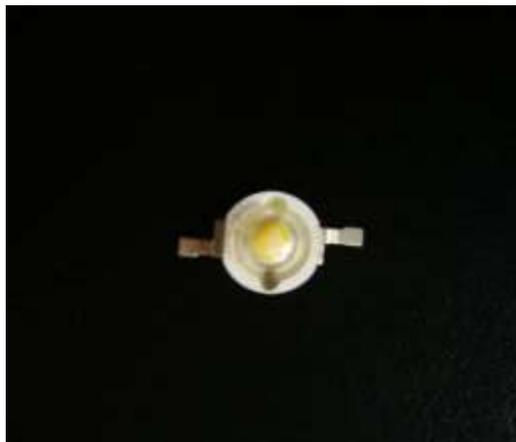


Fig. S7 Digital photo of PC beads based WLED