

# Supporting Information

## Surface Functionalization of Hydrophobic Nanocrystals with One Particle per Micelle for Bioapplications

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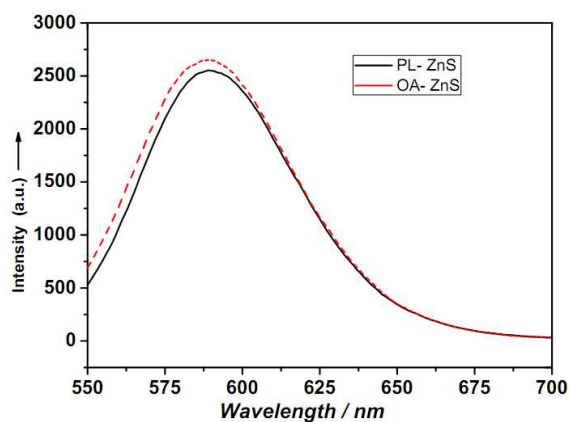


Figure S1. Fluorescence spectra of ZnS:Mn<sup>2+</sup> nanoparticles before (red dash line) and after (black solid line) surface modification. The hydrophobic QDs capped with oleic acid were dispersed in chloroform and the hydrophilic QDs capped with PL were dispersed in water. The concentration of both QDs is 7.5 mM. The excitation wavelength was 254 nm and the excitation conditions are identical.

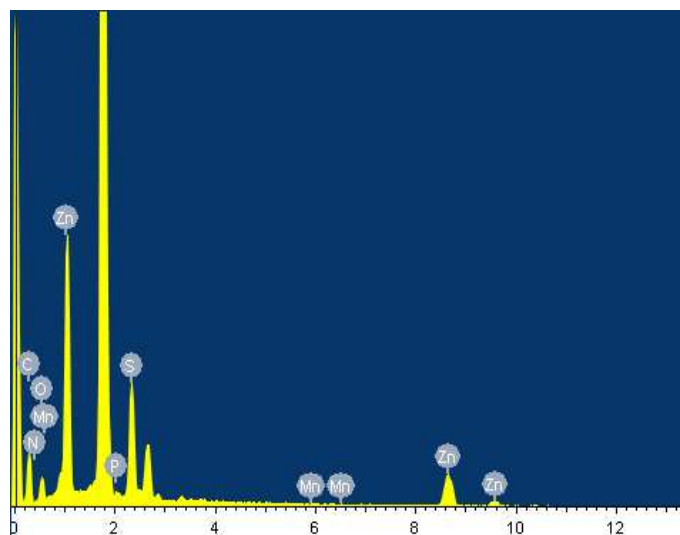


Figure S2. EDS analysis of surface functionalized ZnS:Mn<sup>2+</sup> quantum dots. Energy dispersive spectrum (EDS) analysis was conducted on a Veeco DI scanning electron microscope (SEM). As shown in the Figure, the EDS result demonstrates the existence of P and N elements derived from the phospholipids on the surface of the functionalized ZnS:Mn<sup>2+</sup> quantum dots.

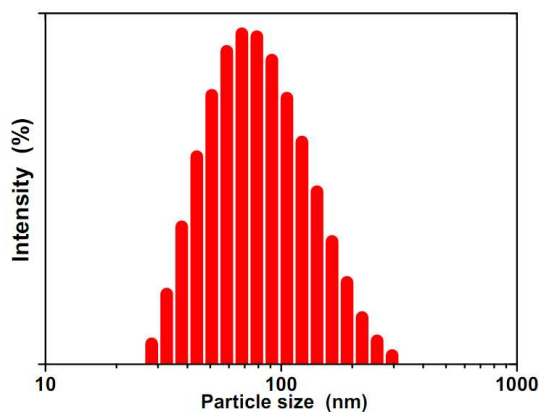


Figure S3. Hydrodynamic diameter distribution of PL-ZnS:Mn<sup>2+</sup> QDs in the dispersion measured using dynamic light scattering (DLS) technology.

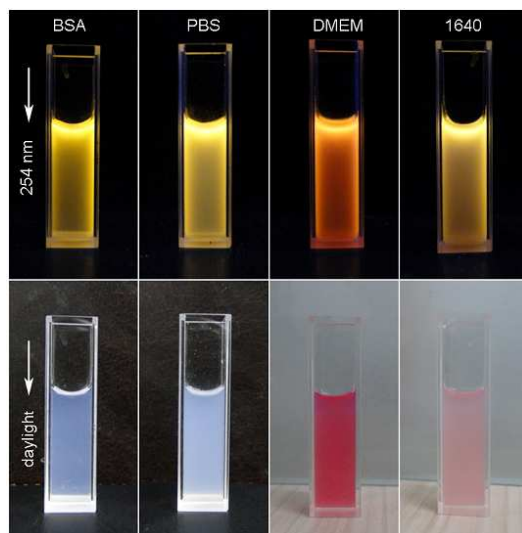


Figure S4. Water-stability test of the hydrophilic QDs dispersed in different solution. These photos were taken one week later after dispersing the nanoparticles into the solution and no flocculation was observed. The results suggest that the nanoparticles are pretty stable in bovine serum albumin (BSA) solution, PBS, DMEM, and 1640 cell culture media. In addition, the luminescence (excited under 254 nm UV light) is pretty strong in various media, indicating that the optical property is well retained during the surface modification.