Supporting Information:

Versatile Fabrication of Water-Dispersible Nanoparticle-Amphiphilic Copolymer Composite Microspheres with Specific Functionalities

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Figure S1. ^{13}C NMR spectra of original PMAO (a) and PMAO-g-PEG (b). (100 MHz, ct=1.0 ms)

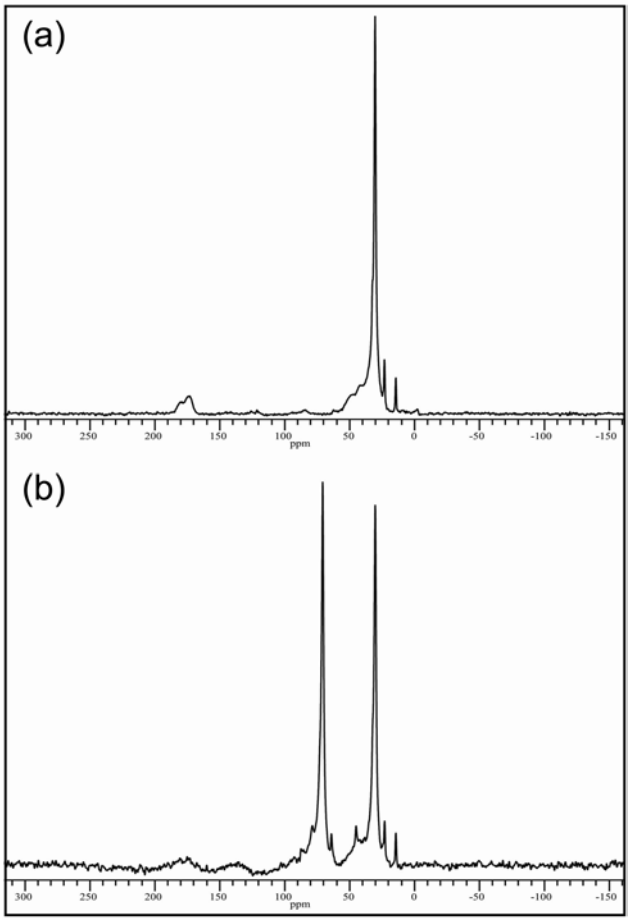


Figure S2. UV-vis absorption spectra (a) and PL spectra (b) of the original aqueous CdTe NPs with different emitting colors. Inset: the PL images of CdTe solution.

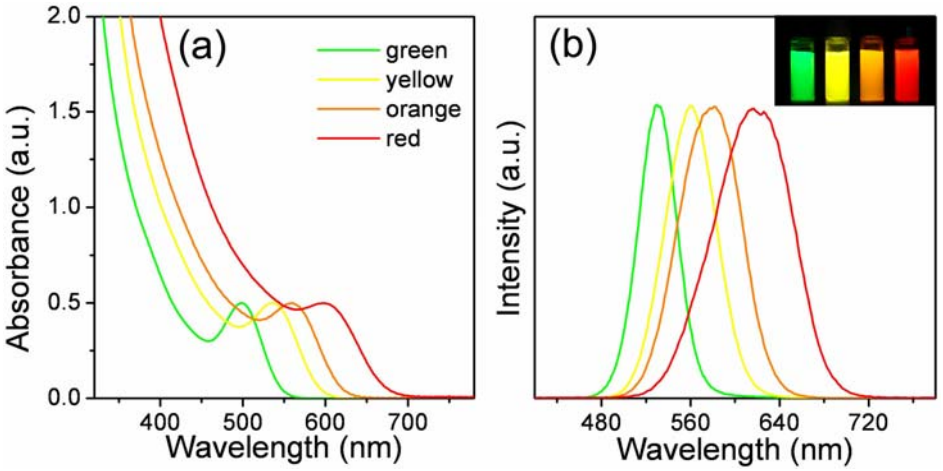


Figure S3. DLS data of the CdTe NP-polymer composite microspheres. The polymer to NPs ratio was 28:1, and the diameter of NPs was 3.8 nm. Corresponding TEM and SEM images were indicated in Figure 4c and d.

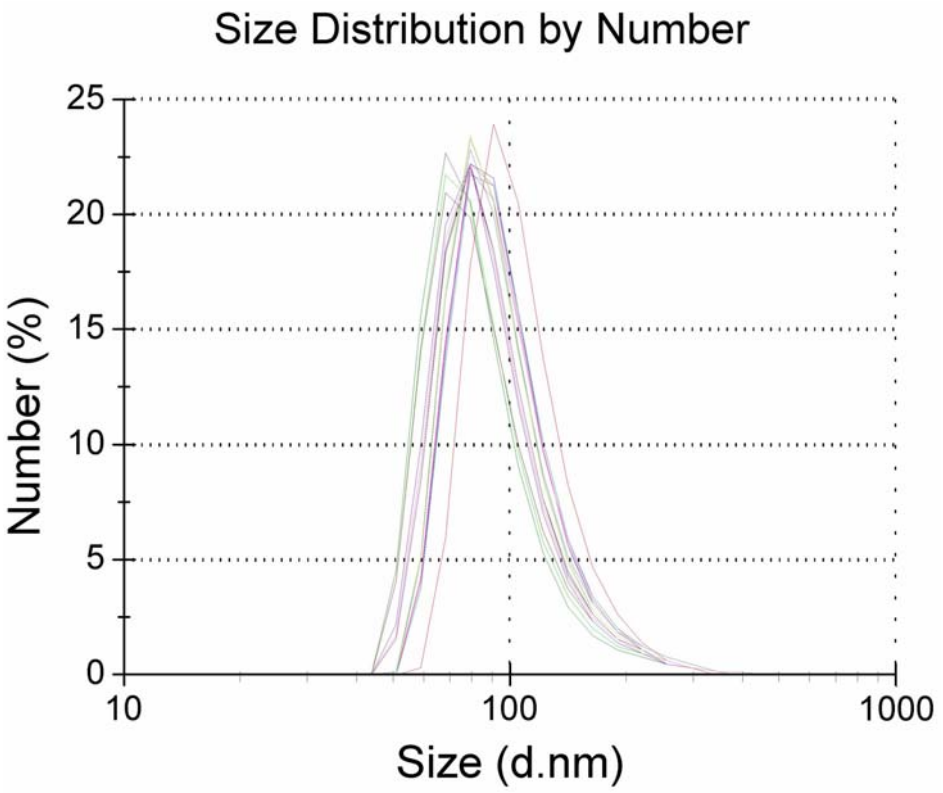
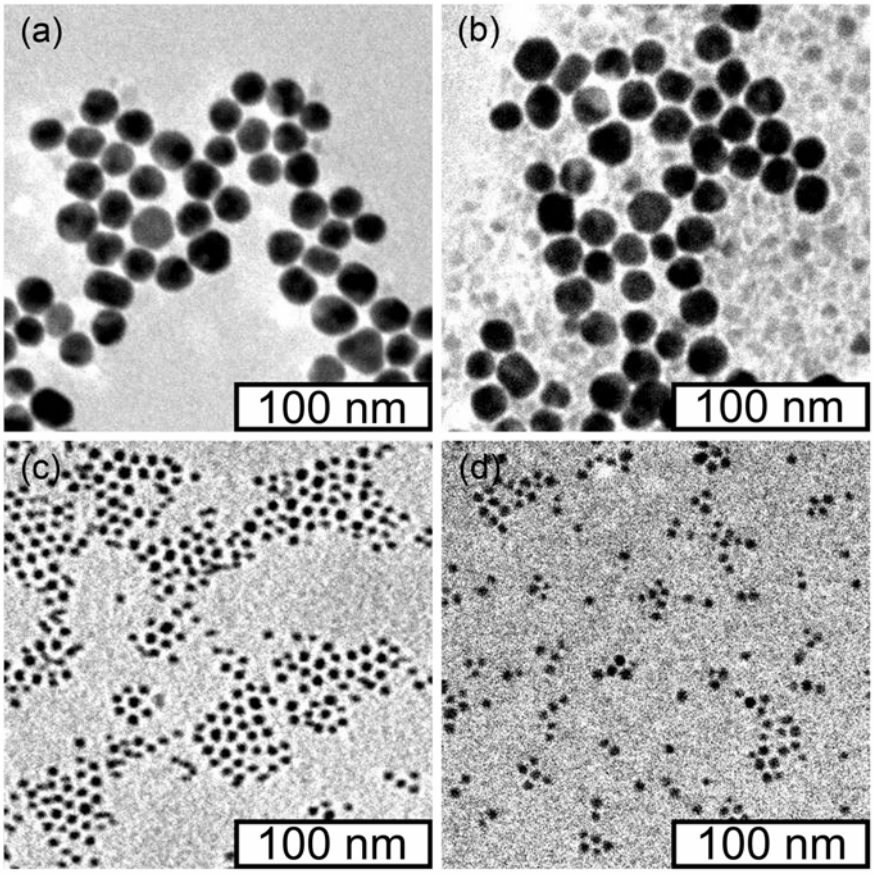


Figure S4. TEM images of Au (a), Pt (b), Pd (c), and Fe_3O_4 NPs (d) used for fabricating composite microspheres. The corresponding composite microspheres were indicated in Figure 8.



Water-soluble Au NPs were prepared through sodium citrate reduction of gold ions. Typically, 200 mL 0.01 wt% aqueous $HAuCl_4$ solution was heated to boiling. Then, 5 mL 2 wt% aqueous sodium citrate solution was quickly injected into the above solution under vigorous stirring. The mixture was kept boiling until the color turned pink. Finally, the solution was cooled to room temperature to obtain citrate-stabilized Au NPs.

Following a similar method, except using H_2PtCl_6 rather than $HAuCl_4$, water-soluble Pt NPs were prepared.

For the preparation of oil-soluble Pd NPs, a 10 mL K_2PdCl_6 aqueous solution (0.30 mM) was mixed with 30 mL octadecyl-p-vinylbenzyldimethylammonium chloride chloroform solution (7 mg/mL) under vigorous stirring. Then, 8.3 mL $NaBH_4$ aqueous solution (9 mg/mL) was added dropwise into the aforementioned mixture under stirring. The mixture was kept stirring for 30 min, and the chloroform phase was separated to obtain Pd NPs.

Oil-soluble Fe_3O_4 NPs were prepared as follows: iron(III) acetylacetonate (2 mM) was mixed in phenyl ether (20 mL) with 1,2-hexadecanediol (10 mM), oleic acid (6 mM), and oleylamine (6 mM) under nitrogen and was heated to reflux for 30 min. After cooled to room temperature, the dark-brown mixture was treated with ethanol under air, and a dark-brown material was precipitated from the solution. The product was dissolved in hexane in the presence of oleic acid and oleylamine and reprecipitated with ethanol to obtain Fe_3O_4 NPs.