Separating and enhancing the green and red emissions of $NaYF_4:Yb^{3+}/Er^{3+}$ by sandwiching them into photonic crystals with different bandgaps

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Fig. S1 (a) TEM images of NaYF₄:Yb³⁺/Er³⁺ nanoparticles (b) TEM images of ligand free NaYF₄:Yb³⁺/Er³⁺ nanoparticles (c) The XRD pattern of NaYF₄:Yb³⁺/Er³⁺ nanoparticles.



Fig. S2 (a-c) SEM images of CdS spheres with different diameters: (a) 190 nm, (b) 245 nm, (c) 365 nm; (d) SEM images of amorphous layer of CdS spheres.



Fig. S3 Absorption spectra of the CdS films with different diameters.



Fig. S4 Reflection spectra of the photonic crystal made up of 190 nm CdS spheres and the amorphous layer of CdS.