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Title of the primary article: Controlled Synthesis of Hexagonal-Shaped
Lanthanide-Doped LaF₃ Nanoplates with Multicolor Upconversion Fluorescence

In this supplement, Fourier transform infrared (FT-IR) spectra of the NCs, effect of acidity on the morphology and structure of the products, mechanisms responsible for the upconversion fluorescence of LaF₃: Yb, Ho, and effect of reaction time on the fluorescence of LaF₃: Yb, Er were presented.

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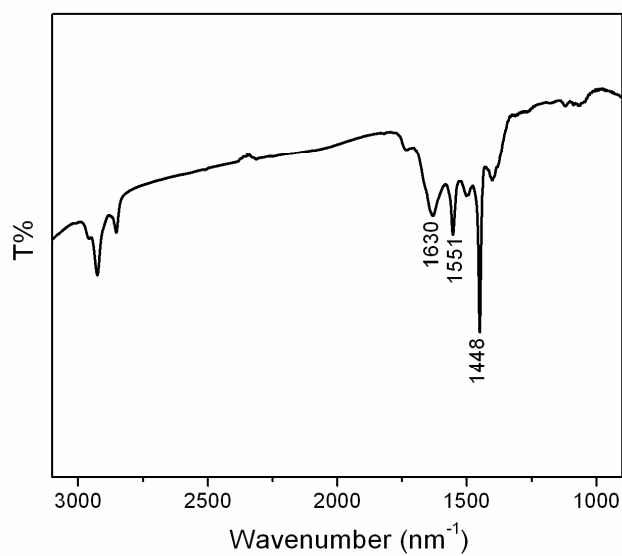


Fig. S1. Fourier transform infrared (FT-IR) spectra of the as-synthesized LaF₃:Yb,Er NCs.

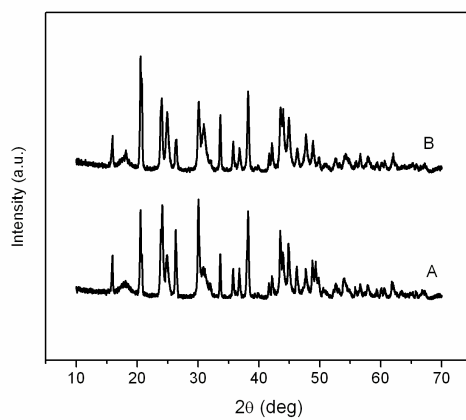
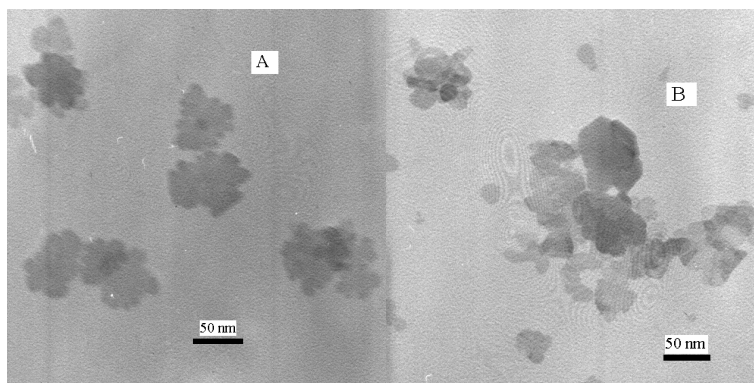


Fig. S2. The effect of the acidity on the morphology and structure of the NCs. A: TEM images of the products obtained at pH ~2; B: TEM images of the products obtained at pH ~7; C: XRD

patterns corresponding to the products obtained under the conditions of A and B. Experimental conditions: 190 °C 24 h.

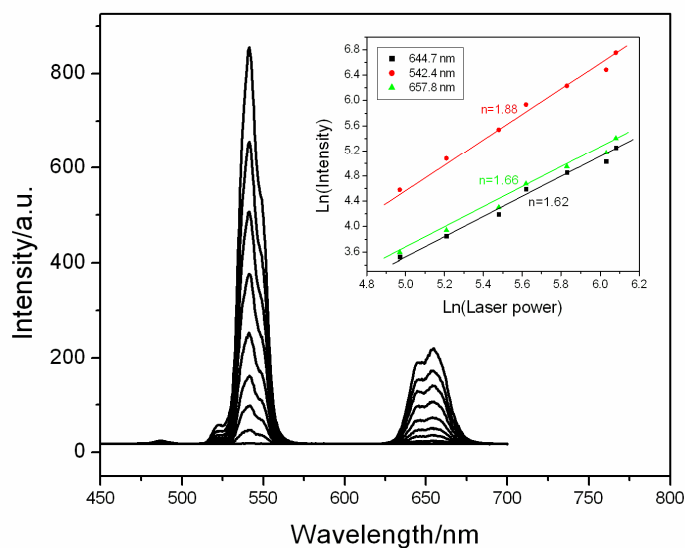


Fig. S3. Intensity dependences of the upconversion fluorescence on the pump power excited at 980 nm for $\text{LaF}_3\text{:Yb, Ho}$.

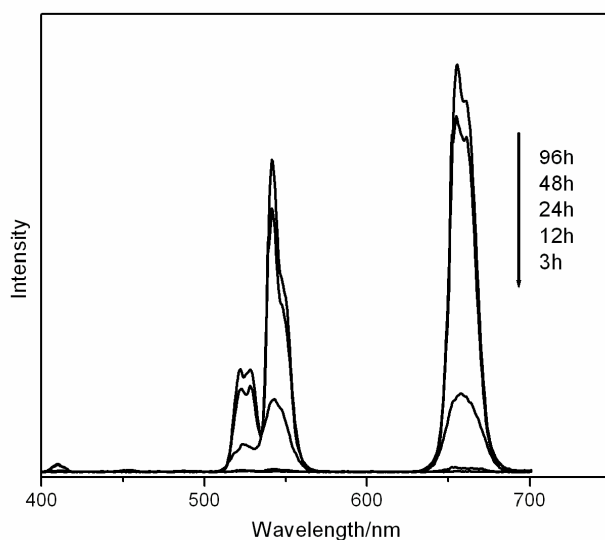


Fig. S4. The effect of reaction time on the UC fluorescence of the $\text{LaF}_3\text{:Yb,Er}$ NCs. It can be seen that the UC fluorescence increased rapidly with the reaction time increasing before 48 h. But there were no obvious increase when the reaction time was longer than 48 h.