Electronic Supplementary Information

794 nm excited core-shell upconversion nanoparticles for optical temperature sensing

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**Fig. S1** Absorption spectra of (a) core NaYF$_4$:Yb$^{3+}$/Er$^{3+}$ UNCPs dispersed in cyclohexane, (b) core/shell NaYF$_4$:Yb$^{3+}$/Er$^{3+}$/NaYF$_4$:Yb$^{3+}$/Nd$^{3+}$ UNCPs dispersed in cyclohexane, and (c) H$_2$O.

**Fig. S2** Decay curves of (a) core NaYF$_4$:Yb$^{3+}$/Er$^{3+}$ UNCPs, (b) core/shell NaYF$_4$:Yb$^{3+}$/Er$^{3+}$/NaYF$_4$:Yb$^{3+}$/Nd$^{3+}$ UNCPs dispersed in cyclohexane.
**Fig. S3** Power dependence curves of core/shell NaYF₄:Yb³⁺/Er³⁺@NaYF₄:Yb³⁺/Nd³⁺ UCNPs for 540 nm emission under (a) 975 nm, and (b) 793.5 nm excitation.

**Fig. S4** Temperature of a glass plate heated by 808 nm laser (0.2 W/cm²). The room temperature is about 19.4 °C.