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Simultaneous phase and size manipulation in $NaYF_4:Er^{3+}/Yb^{3+}$ upconverting nanoparticles for non-invasion optical thermometer

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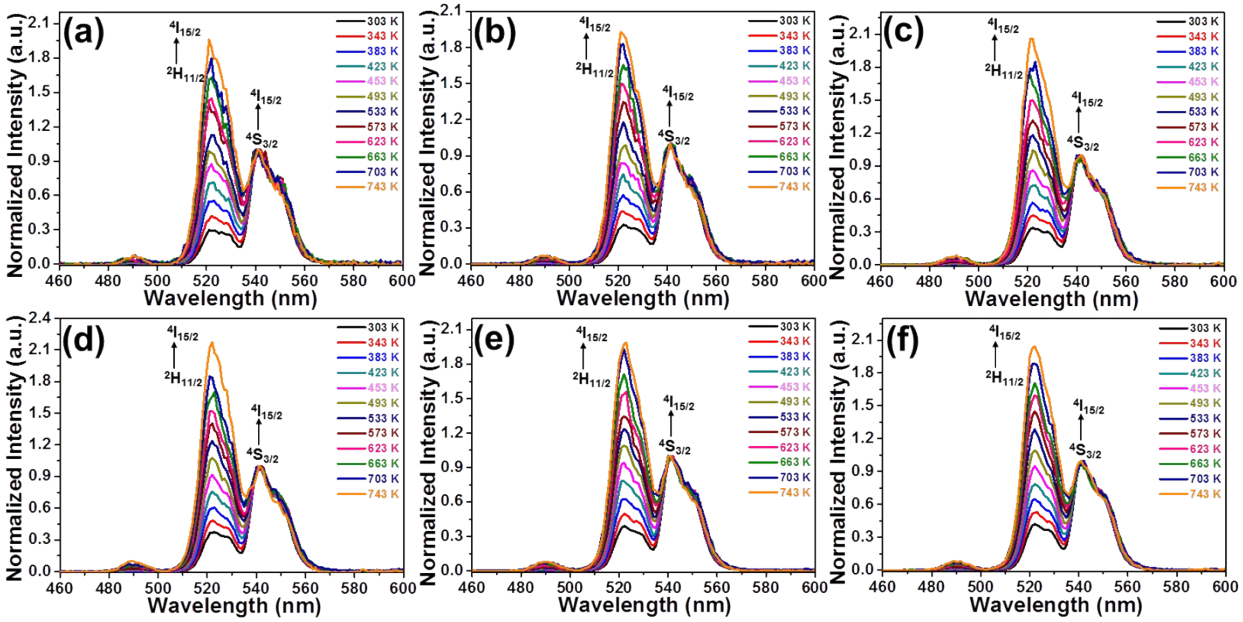

Figure S1. Temperature-dependent green UC emission spectra of $NaYF_4:Er^{3+}/Yb^{3+}$ upconverting nanoparticles prepared at 160 °C under irradiation of a 980 nm laser diode with different pump powers of (a) 79 mW, (b) 99 mW, (c) 119 mW, (d) 139 mW, (e) 159 mW and (f) 179 mW.

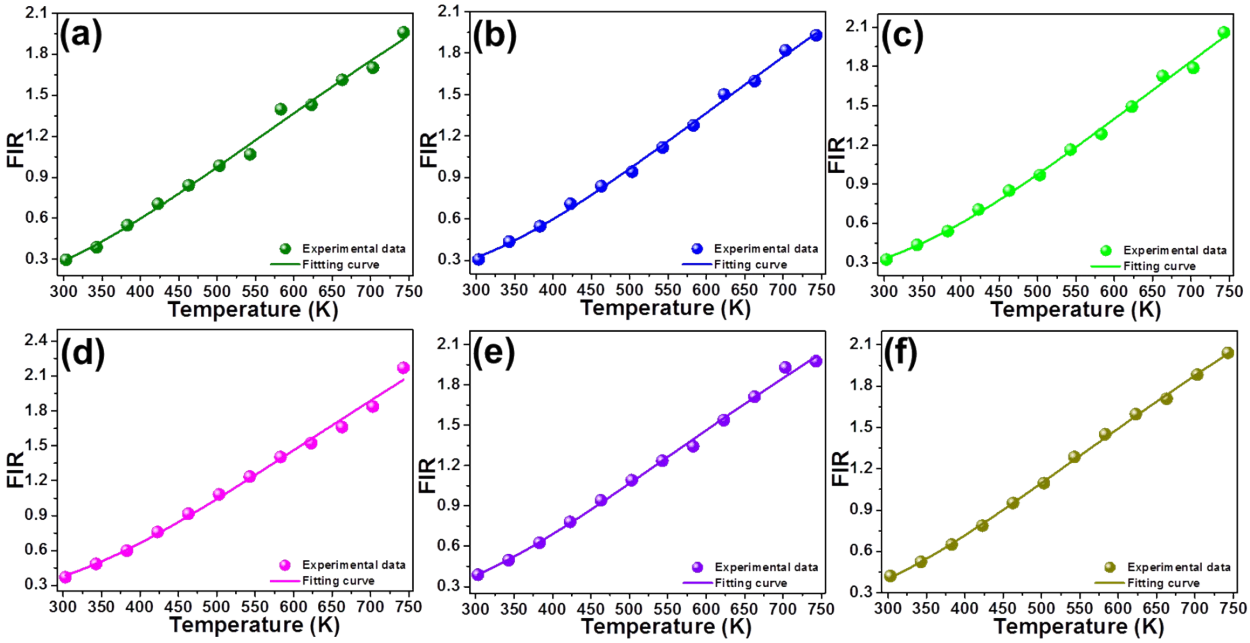

Figure S2. FIR related to temperature for $NaYF_4:Er^{3+}/Yb^{3+}$ upconverting nanoparticles obtained at 160 °C under different excitation pump powers of (a) 79 mW, (b) 99 mW, (c) 119 mW, (d) 139 mW, (e) 159 mW and (f) 179 mW.

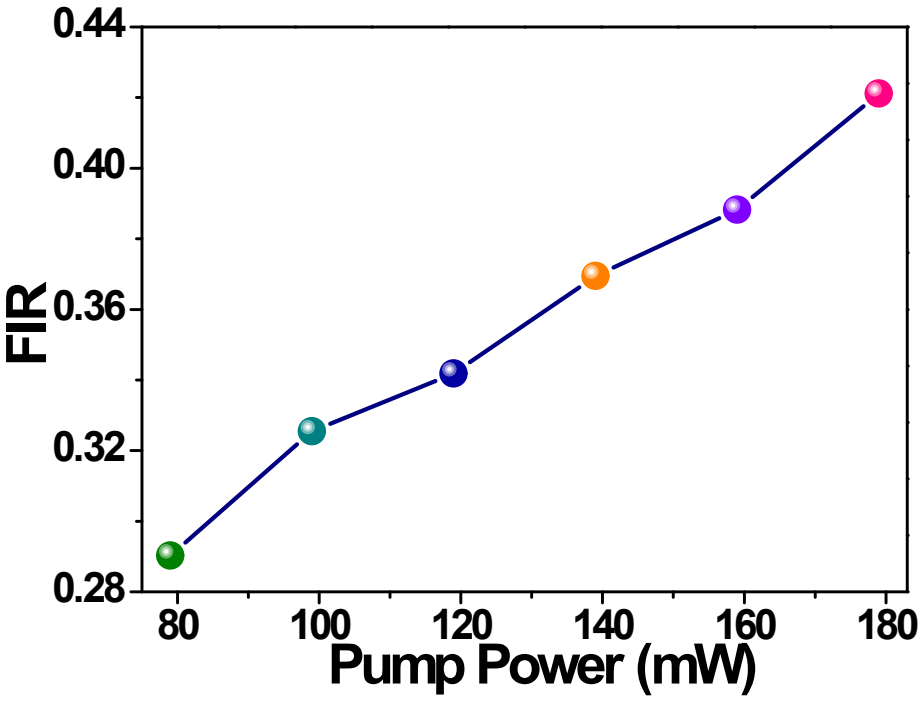

Figure S3. Pump power-dependent FIR values of green UC emissions for the $NaYF_4:Er^{3+}/Yb^{3+}$ upconverting nanoparticles synthesized at 160 °C.