

Supporting information - Finely-tuned NIR-to-visible up-conversion in $\text{La}_2\text{O}_3:\text{Yb}^{3+},\text{Er}^{3+}$ microcrystals with high quantum yield

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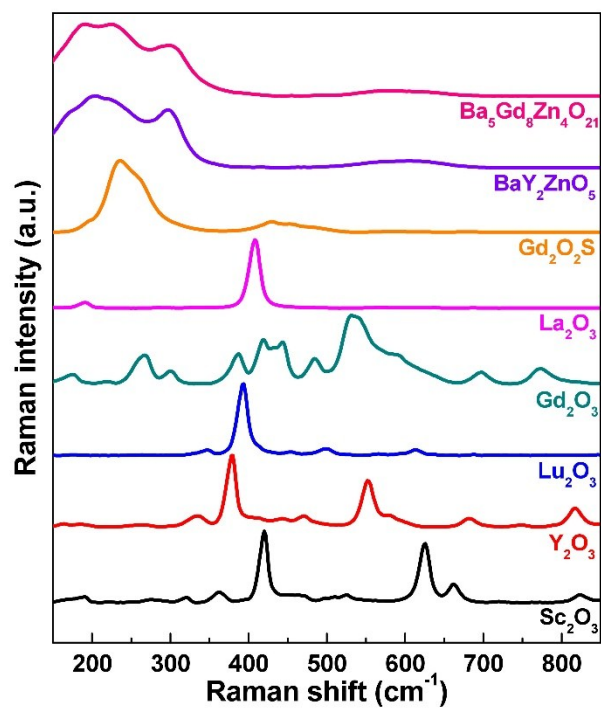


Figure S1. Raman spectra of Re_2O_3 (RE = La, Gd, Lu, Y and Sc) and reference materials of $\text{Gd}_2\text{O}_2\text{S}$, BaY_2ZnO_5 and $\text{Ba}_5\text{Gd}_8\text{Zn}_4\text{O}_{21}$ under excitation of 785 nm laser.

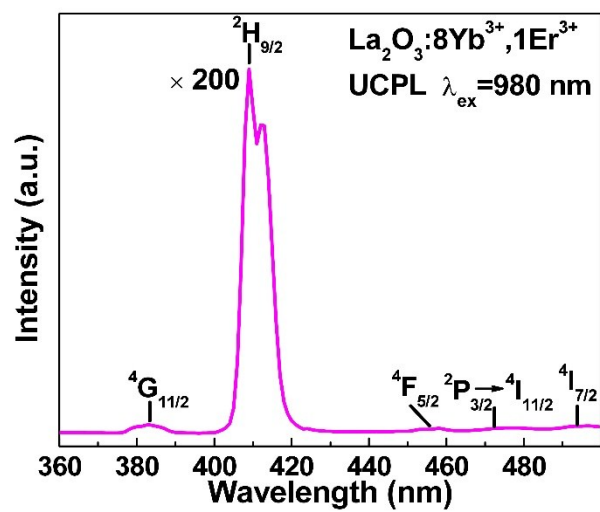


Figure S2. Zoomed (by a factor of $\times 200$) UC emission spectrum in the spectral region of 360 – 500 nm for LYE-8 with an excitation power density of 0.5 W/cm^2 .

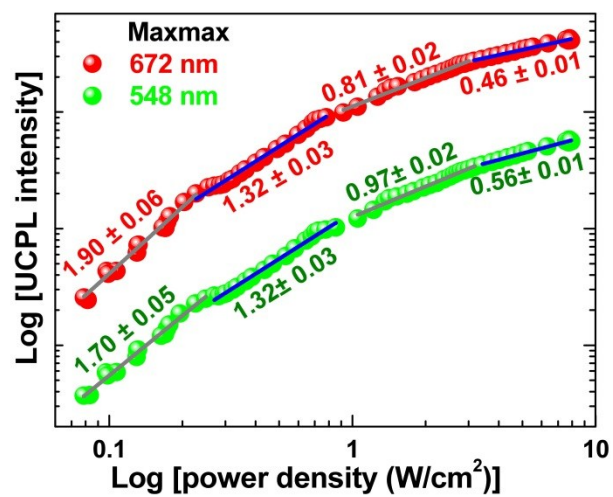


Figure S3. Double logarithmic plot of the variation of UC emission intensity in red and green with excitation power density for $\text{Gd}_2\text{O}_2\text{S}:\text{Yb}^{3+},\text{Er}^{3+}$ (Maxmax).

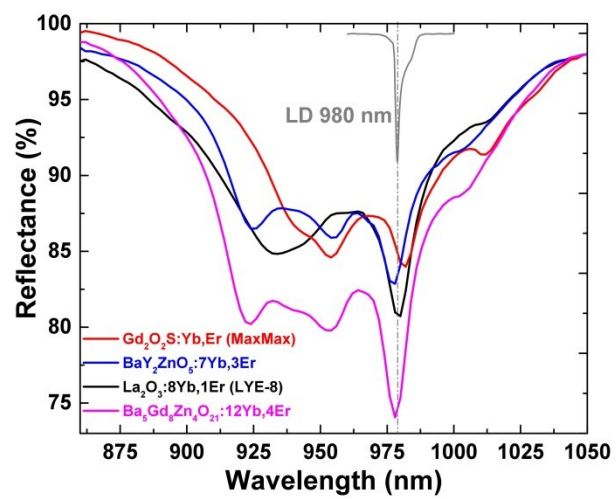


Figure S4. Diffuse reflectance spectra of LYE-8, BYYE, BGYE and Maxmax in spectral region of 860 – 1050 nm.

