

Supporting Information

Cubic KLu₃F₁₀ host: Mn²⁺ dopant-controlled synthesis and upconversion luminescence

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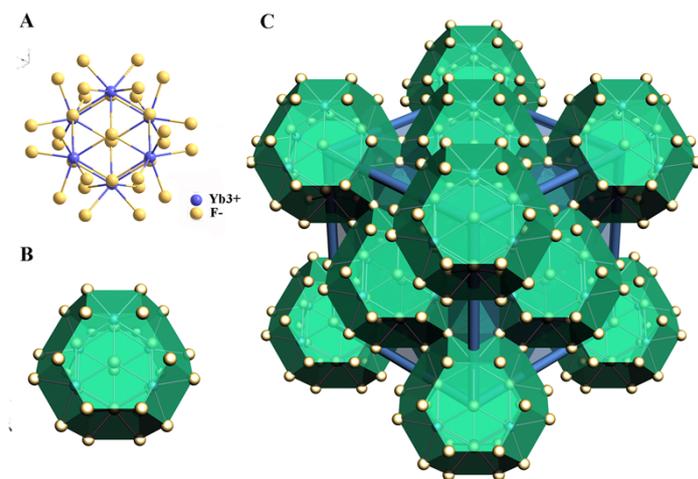


Fig. S1 The crystal structure of cluster $\{Yb_6F_{32}\}$ (A), view of the cluster as truncated octahedron (B), and packing of the truncated octahedron in structure of cubic KYb_3F_{10} .

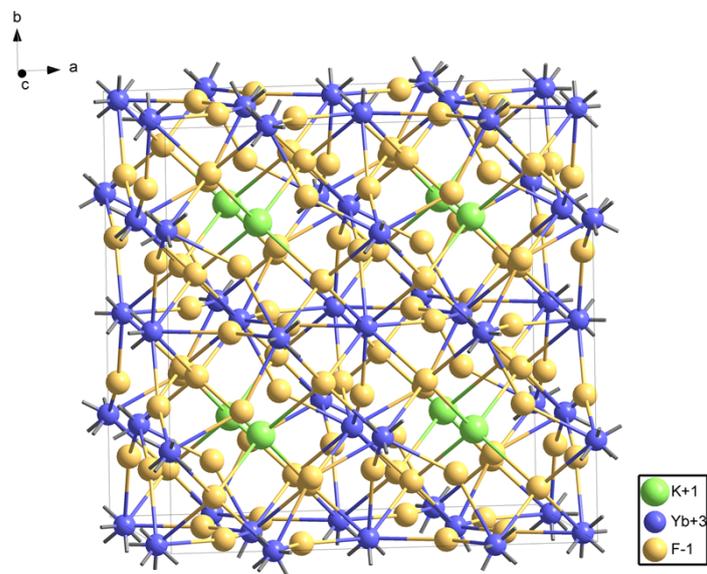


Fig. S2 The crystallographic structure of cubic $\text{KYb}_3\text{F}_{10}$.

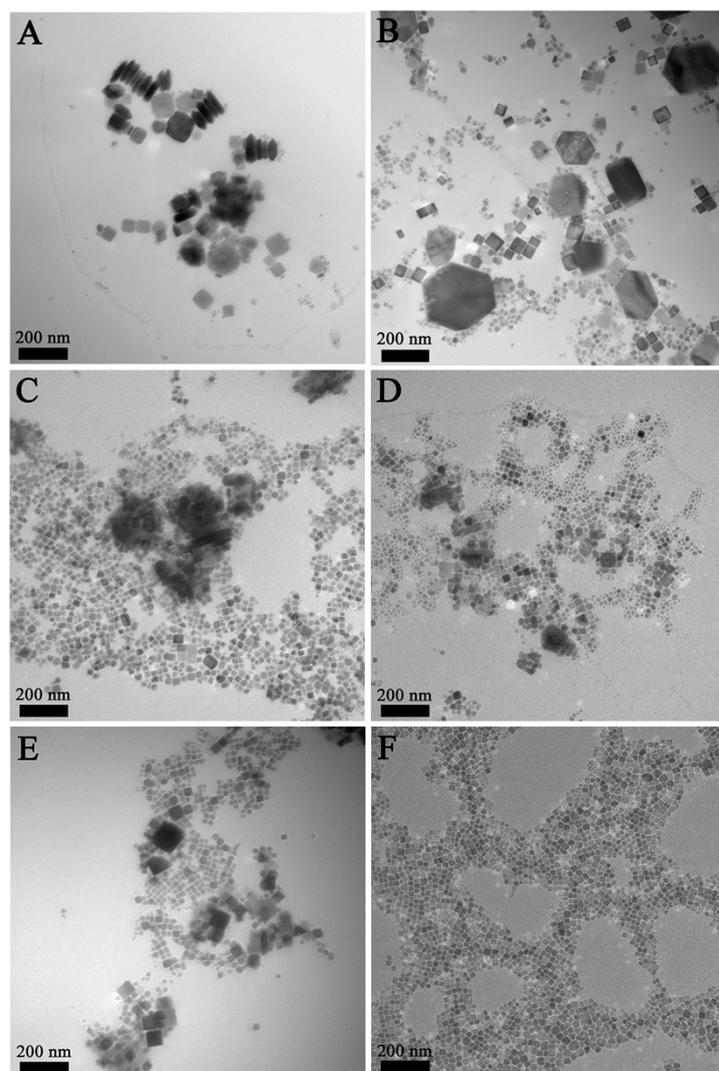


Fig. S3 TEM images of 20 % Mn²⁺ ions doped KLu₃F₁₀ UCNPs at different reaction time: 1 h (A), 2 h (B), 3 h (C), 5 h (D), 6 h (E), and 8 h (F).

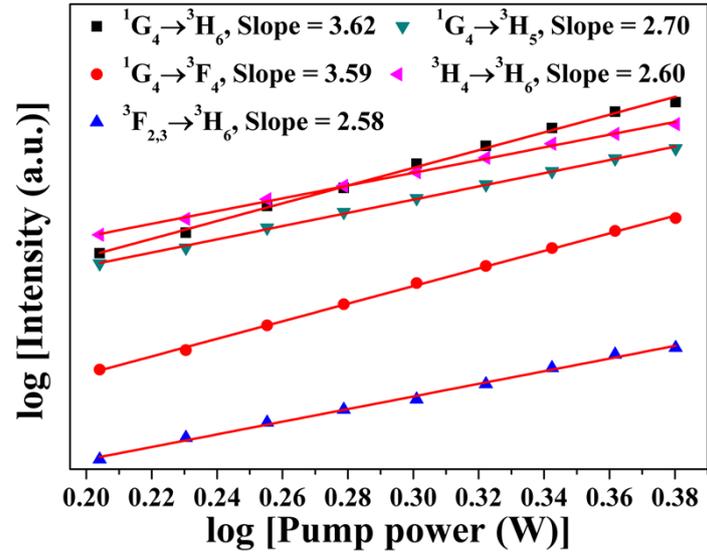


Fig. S4 Log-log plot of the UCL intensities of $\text{KLu}_3\text{F}_{10}:\text{Mn}^{2+}/\text{Yb}^{3+}/\text{Tm}^{3+}$ (15:18:0.5 mol %) UCNPs as a function of 980 nm pump power.

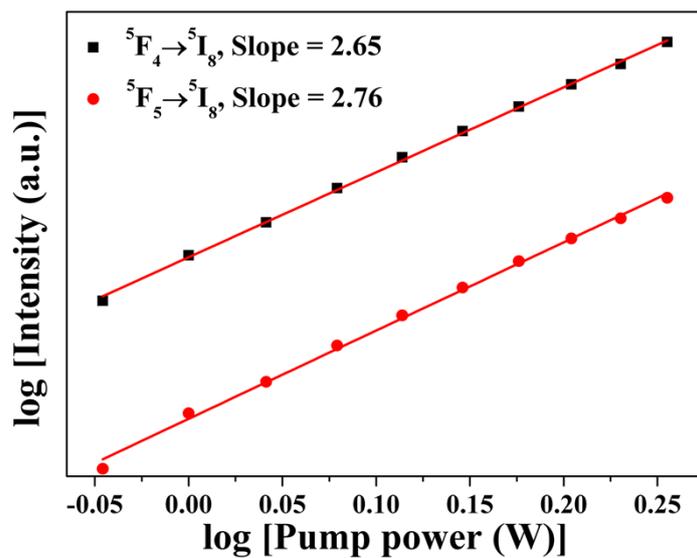


Fig. S5 Log-log plot of the UCL intensities of $\text{KLu}_3\text{F}_{10}:\text{Mn}^{2+}/\text{Yb}^{3+}/\text{Ho}^{3+}$ (15:18:2 mol %) UCNPs as a function of 980 nm pump power.