

Controllable synergistic effect of Yb³⁺, Er³⁺ co-doped KLu₂F₇ with the assistant of defect state

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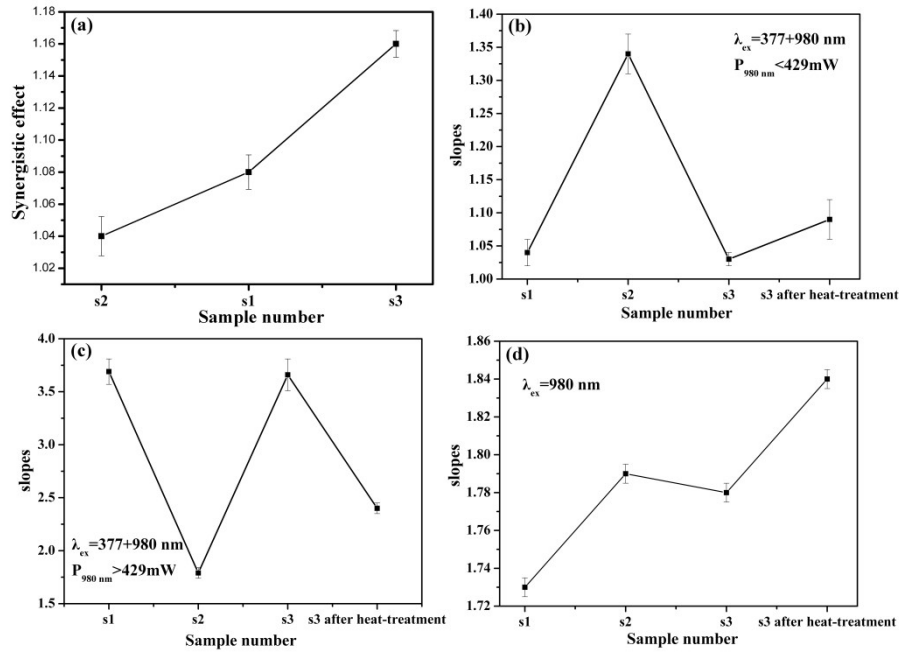


Fig. S1 A scale of error bar of synergistic effect of samples s1, s2 and s3 (a), UC photons under dual-excitation of 377 and 980 nm ($P_{980 \text{ nm}} < 429 \text{ mW}$) (b), $P_{980 \text{ nm}} > 429 \text{ mW}$ (c) and under single excitation of 980 nm with samples s1, s2, s3 and s3 after heat-treatment.

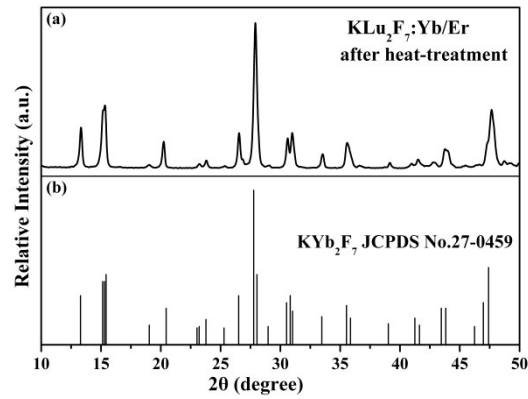


Fig. S2 XRD patterns of sample s3 after heat-treatment (a) and the standard card of KYb_2F_7 (b).