

**Enhanced Up-conversion luminescence and Temperature-sensing of  
GdVO<sub>4</sub>:Ln<sup>3+</sup> with dual-wavelength excitation**

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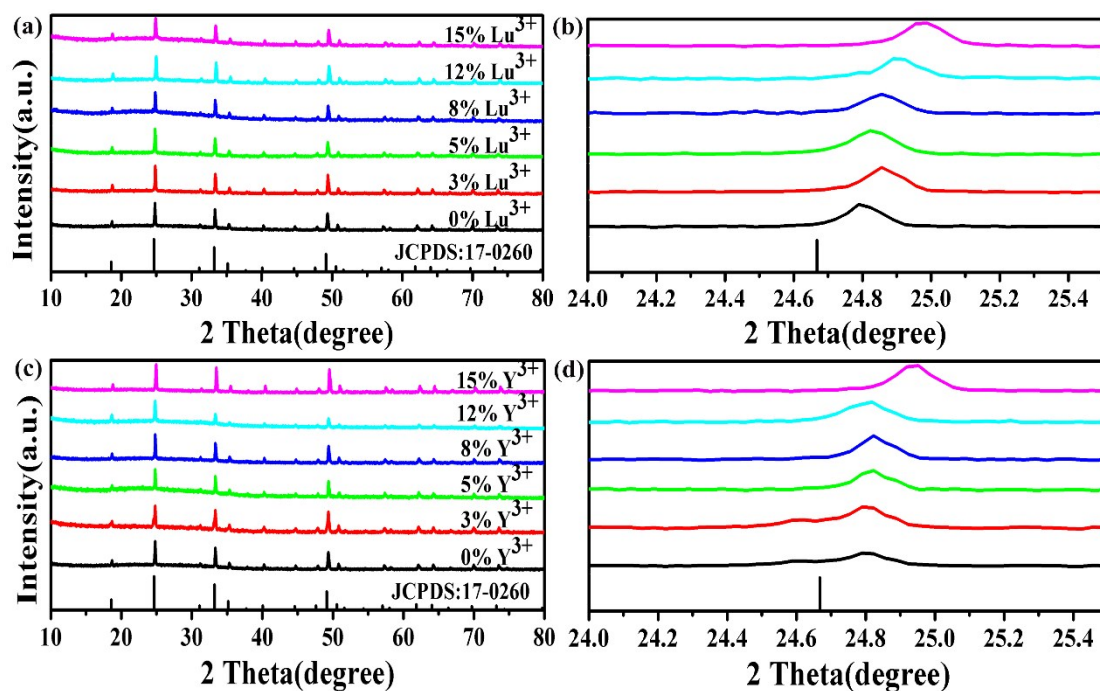


Fig. S1 XRD patterns of  $(\text{Gd}_{1-x}\text{Lu}_x)\text{VO}_4:2\%\text{Er}^{3+}/15\%\text{Yb}^{3+}$  and  $(\text{Gd}_{1-y}\text{Y}_y)\text{VO}_4:2\%\text{Er}^{3+}/15\%\text{Yb}^{3+}$  ( $0 \leq x, y \leq 15$ ) samples in the range of (a), (c)  $10\text{-}80^\circ$ , (b), (d)  $24\text{-}25.5^\circ$ .

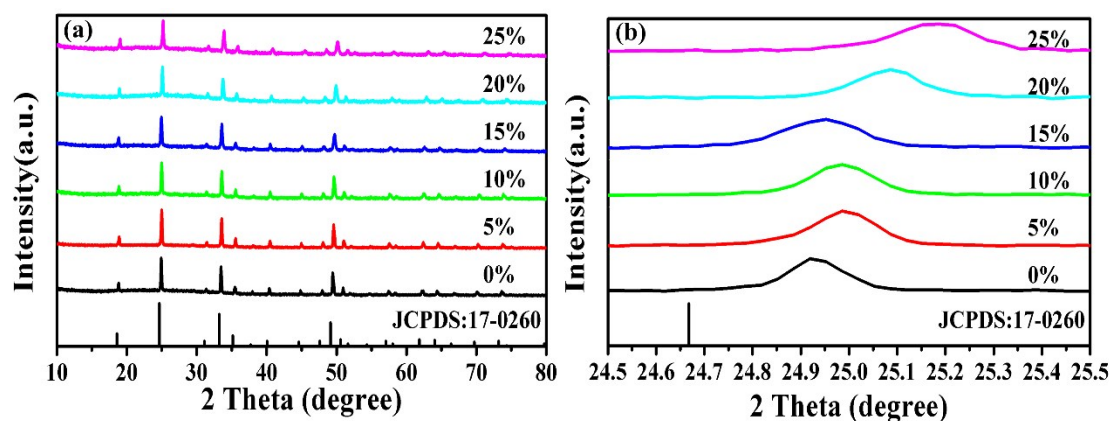


Fig. S2 XRD patterns of  $\text{Gd}(\text{V}_{1-x}\text{P}_x\text{O}_4):2\%\text{Er}^{3+}/15\%\text{Yb}^{3+}$  ( $0 \leq x \leq 25$ ) samples in the range of (a)  $10\text{-}80^\circ$ , (b)  $24.5\text{-}25.5^\circ$ .