

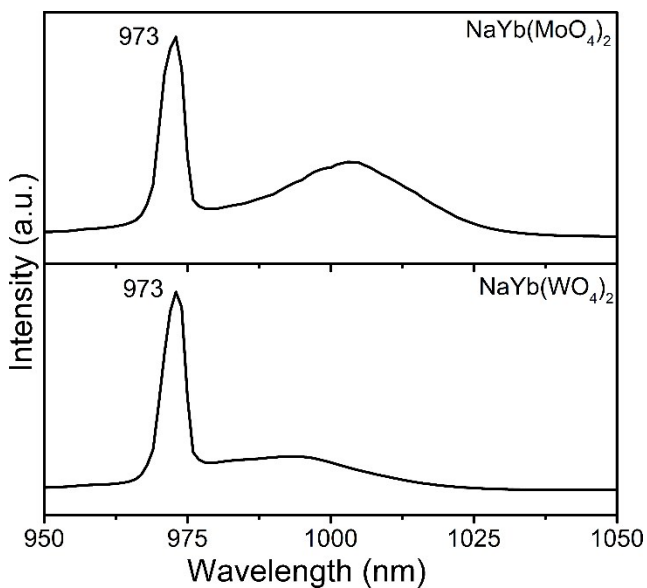
## Supporting Information

### NIR-to-NIR and NIR-to-Blue Light Upconversion in Stoichiometric NaYb(MO<sub>4</sub>)<sub>2</sub> (M = Mo, W)

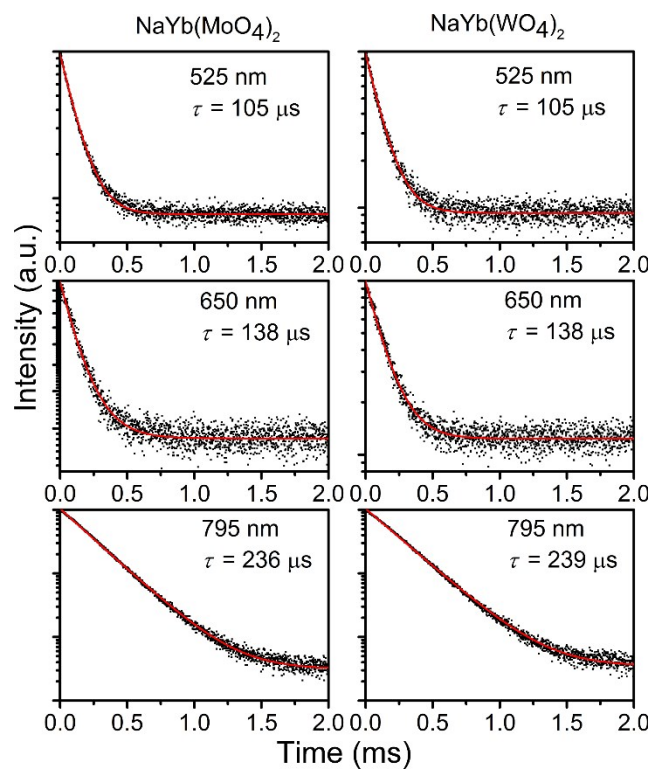
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**Figure S1.** Downconversion luminescence spectra of NaYb(MoO<sub>4</sub>)<sub>2</sub> and NaYb(WO<sub>4</sub>)<sub>2</sub> under 973 nm excitation (650 mW).



**Figure S2.** Decay curves of the 525 ( $\text{Er}^{3+}: {}^2H_{11/2} \rightarrow {}^4I_{15/2}$ ), 650 ( $\text{Er}^{3+}: {}^4F_{9/2} \rightarrow {}^4I_{15/2}$ ), and 795 nm ( $\text{Tm}^{3+}: {}^3H_4 \rightarrow {}^3H_6$ ) emissions of  $\text{NaYb}(\text{MoO}_4)_2$  (left panel) and  $\text{NaYb}(\text{WO}_4)_2$  (right panel) under 973 nm excitation (650 mW). Monoexponential fits are depicted as solid red lines; the corresponding lifetimes  $\tau$  are given.