

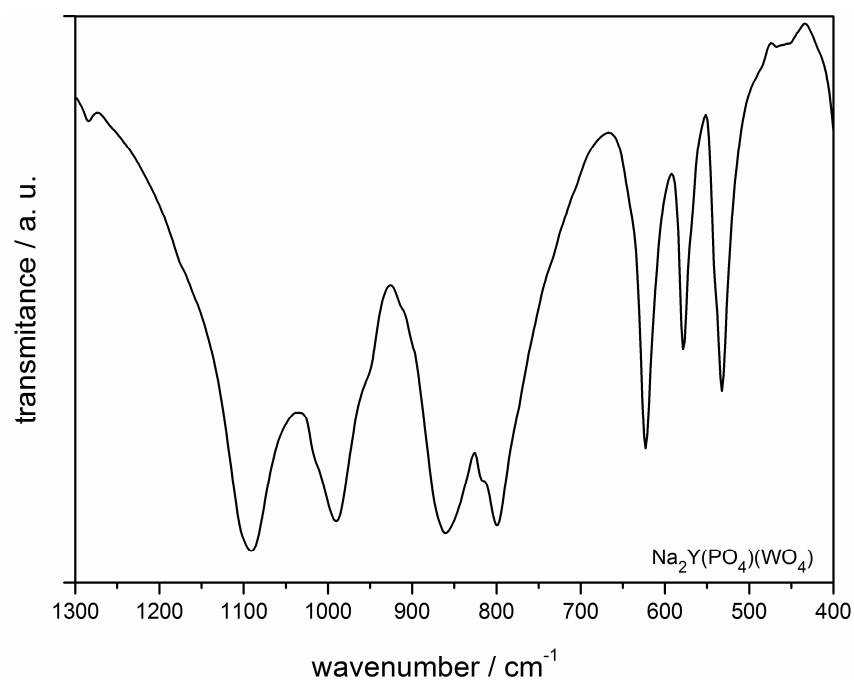


Fig. S1. IR spectrum of $\text{Na}_2\text{Y}(\text{PO}_4)(\text{WO}_4)$.

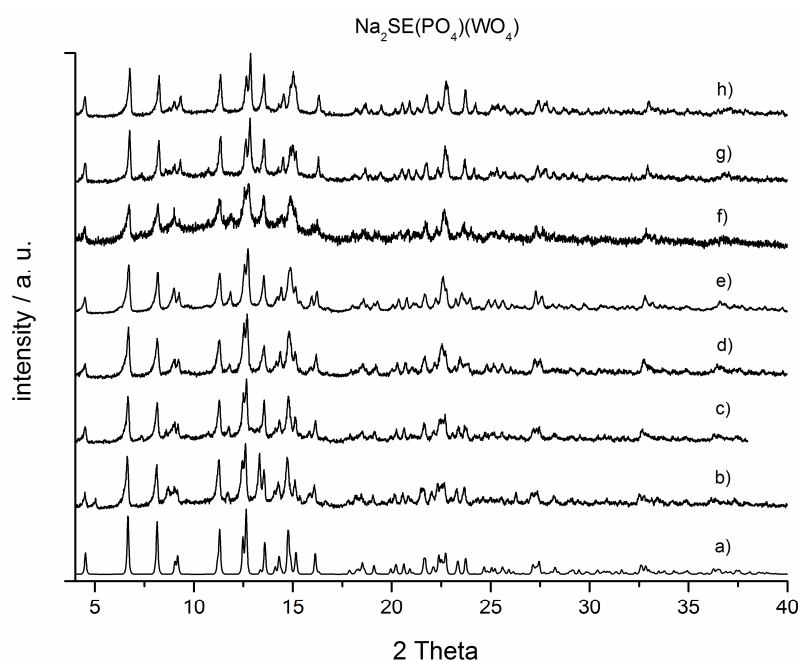


Fig. S2. X-ray powder diffraction patterns ($\text{Mo-K}\alpha$ radiation) of $\text{Na}_2\text{Ln}(\text{PO}_4)(\text{WO}_4)$: a) $\text{Ln} = \text{Tb}$, calculated from single crystal data; b) $\text{Ln} = \text{Tb}$; c) $\text{Ln} = \text{Dy}$; d) $\text{Ln} = \text{Ho}$; e) $\text{Ln} = \text{Er}$; f) $\text{Ln} = \text{Tm}$; g) $\text{Ln} = \text{Yb}$, h) $\text{Ln} = \text{Lu}$.

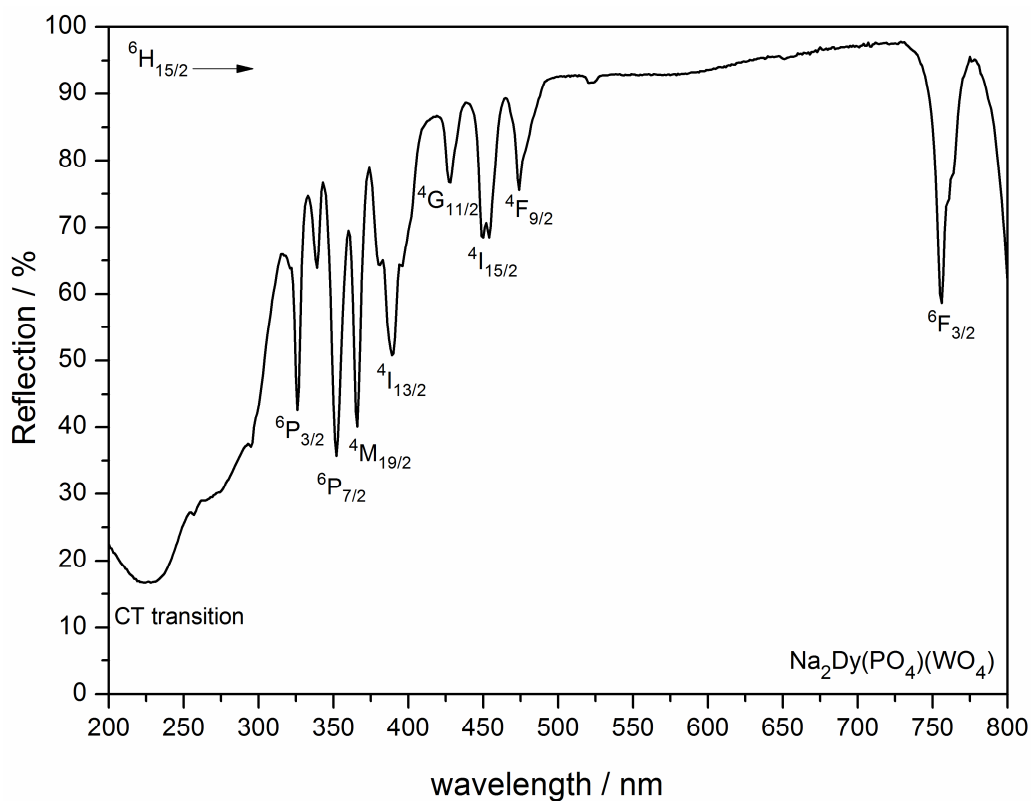


Fig. S3: UV-Vis reflection spectrum of $\text{Na}_2\text{Dy}(\text{PO}_4)(\text{WO}_4)$.

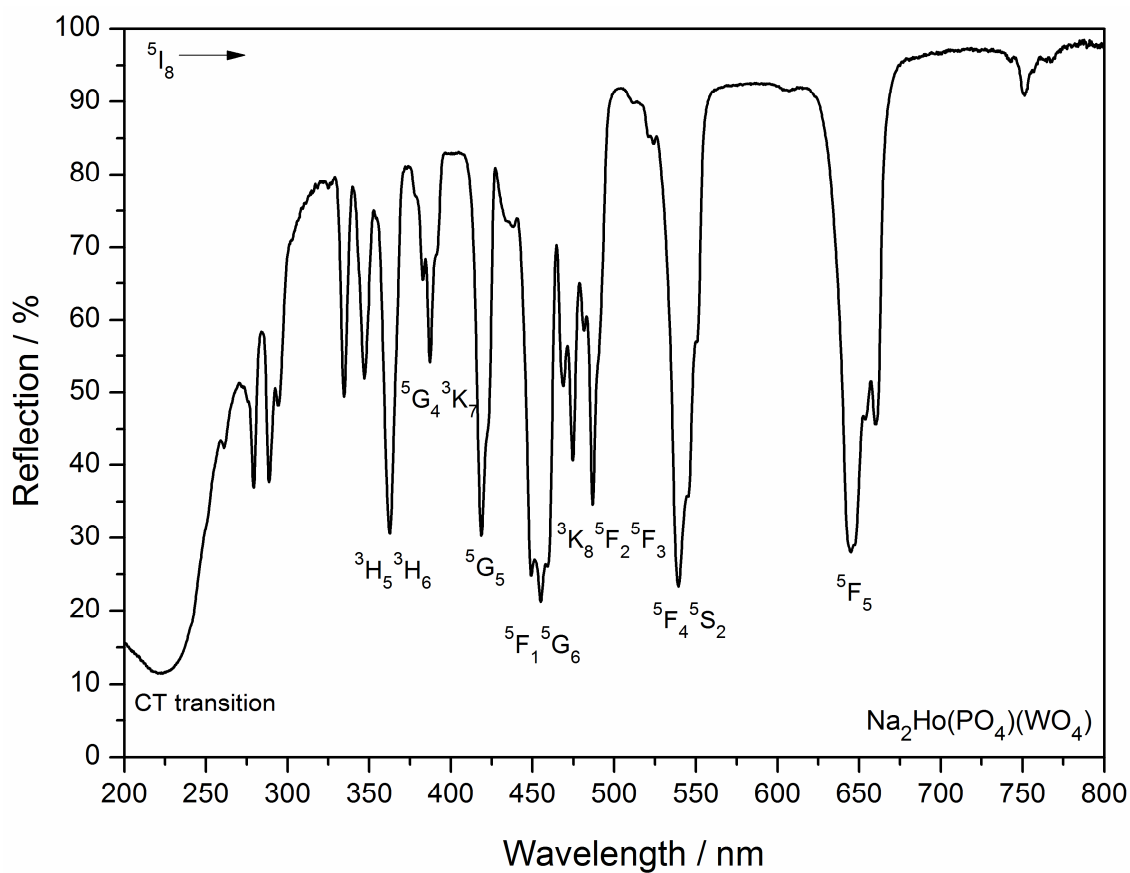


Fig. S4: UV-Vis reflection spectrum of $\text{Na}_2\text{Ho}(\text{PO}_4)(\text{WO}_4)$.

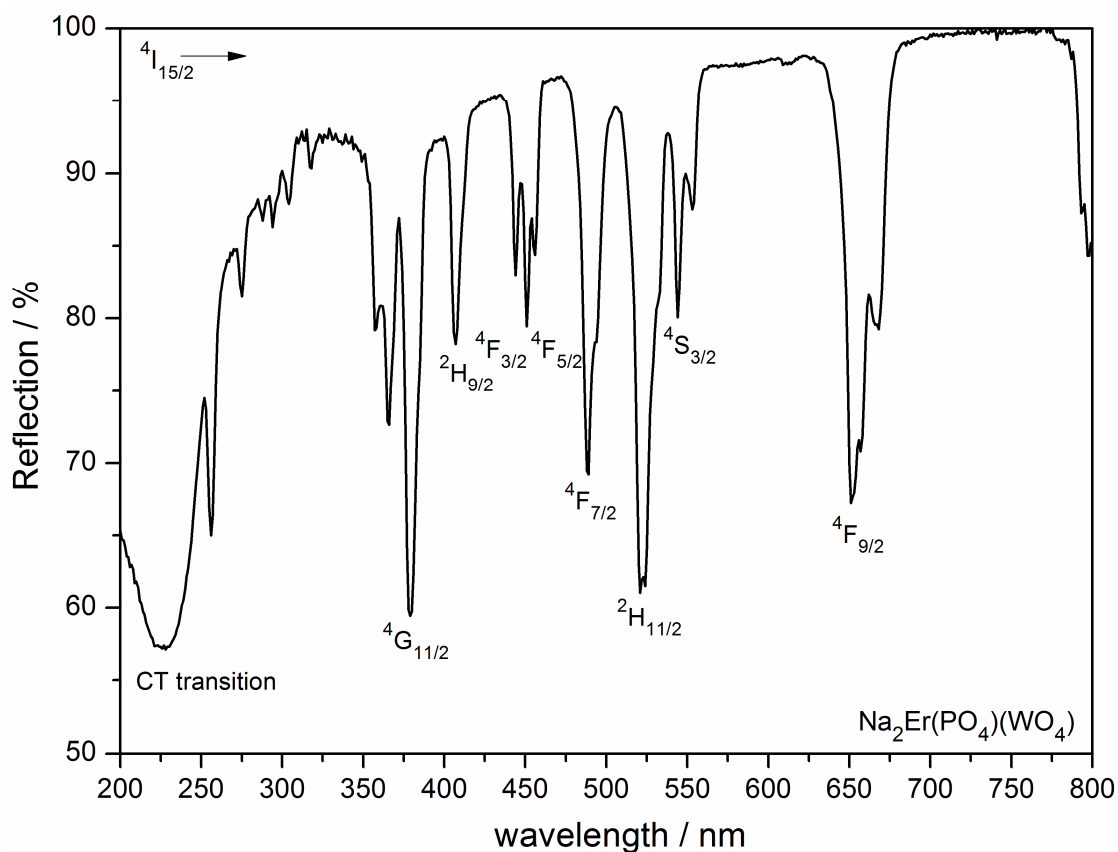


Fig. S5: UV-Vis reflection spectrum of $\text{Na}_2\text{Er}(\text{PO}_4)(\text{WO}_4)$.

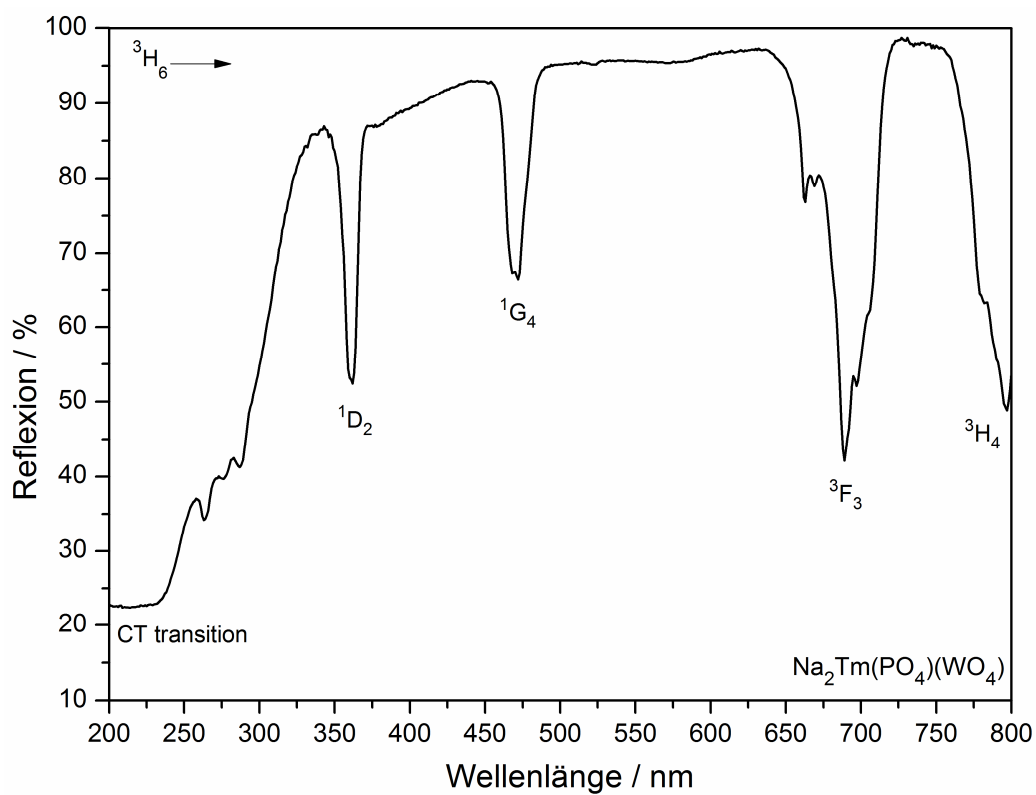


Fig. S6: UV-Vis reflection spectrum of $\text{Na}_2\text{Tm}(\text{PO}_4)(\text{WO}_4)$.

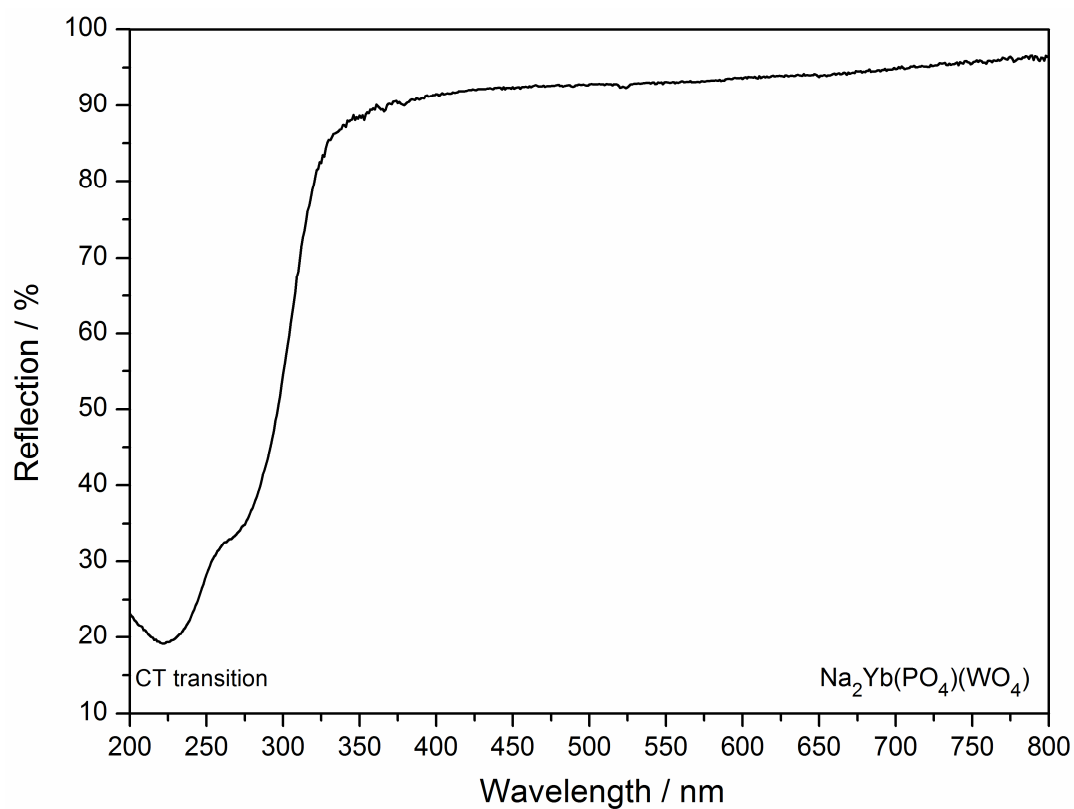


Fig. S7: UV-Vis reflection spectrum of $\text{Na}_2\text{Yb}(\text{PO}_4)(\text{WO}_4)$.

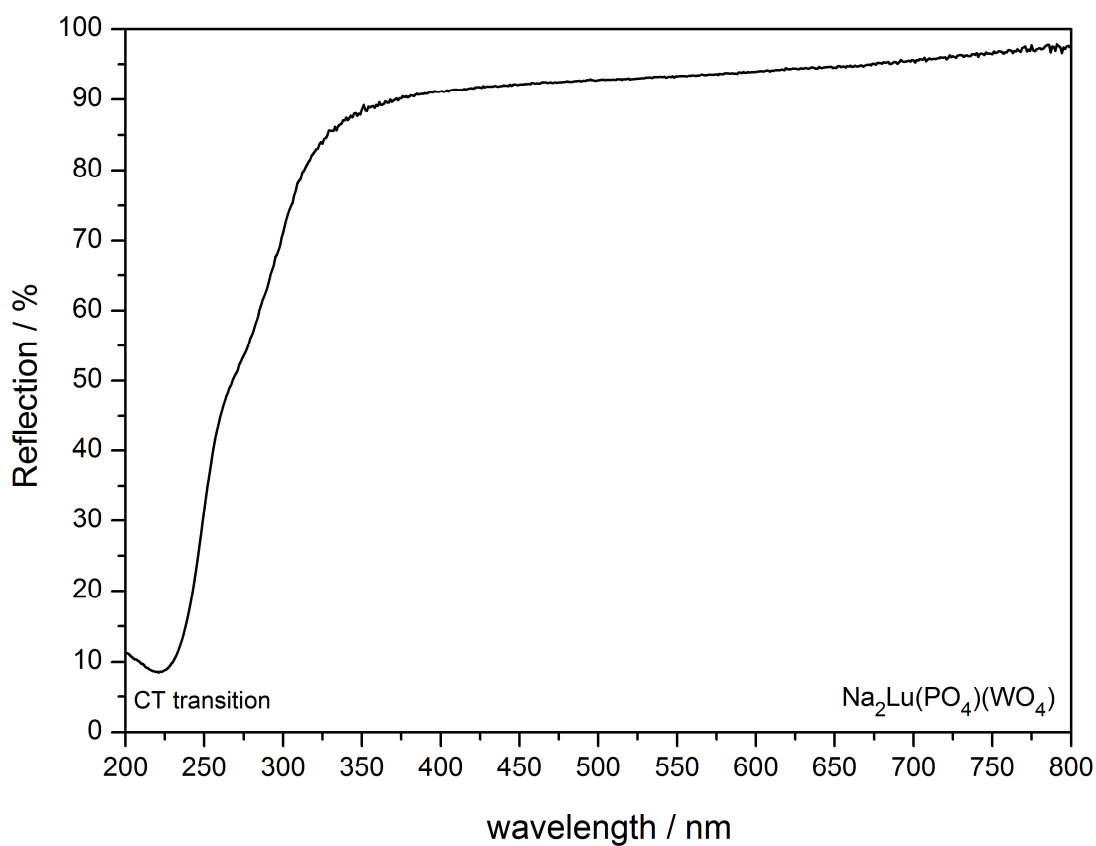


Fig. S8: UV-Vis reflection spectrum of $\text{Na}_2\text{Lu}(\text{PO}_4)(\text{WO}_4)$.