Fig. S1 TGA-DSC curves of the raw materials (Li$_2$CO$_3$, La$_2$O$_3$ and WO$_3$) after grinding.
Fig. S2 Spectral overlap between the excitation spectrum of LiLa(WO$_4$)$_2$:0.04Dy$^{3+}$ and emission spectrum of LiLa(WO$_4$)$_2$:0.04Tm$^{3+}$.