Supporting Information

Photoluminescence Properties of ScBO$_3$:Cr$^{3+}$ Phosphor and its Applications for Broadband Near-Infrared LEDs

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**Fig. S1** The quantitative excitation profiles and emission spectra of the ScBO$_3$:0.02Cr$^{3+}$ phosphor and the reference sample under ~450 nm excitation for quantum yield measurements.
Fig. S2 Normalized emission spectra of ScBO$_3$:xCr$^{3+}$ phosphors (x=0.005–0.1) upon excitation at ~450 nm.
Fig. S3 Luminescent decay curves of ScBO$_3$:xCr$^{3+}$ phosphors with various Cr$^{3+}$ concentrations ($\lambda_{\text{ex}} = 450$ nm). All the decay curves can be well fitted by a single exponential function:

$$I = I_0 \exp\left(\frac{-t}{\tau}\right)$$