Supplementary Information

Indirect and Time-lapse X-ray Detection with Ba_2LuNbO_6: Bi^{3+} Double Perovskite Phosphors

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Table S1. The parameters of the TL curves of Ba_2LuNbO_6: 0.03 Bi^{3+}.

Trap	T_1(K)	T_m(K)	T_2(K)	τ	δ	ω	μ_g	E(eV)
T_A	319	337	355	c	18	36	0.50	0.849
T_B	359	379	397	20	19	39	0.49	0.961
T_C	435	458	477	23	19	42	0.45	1.138

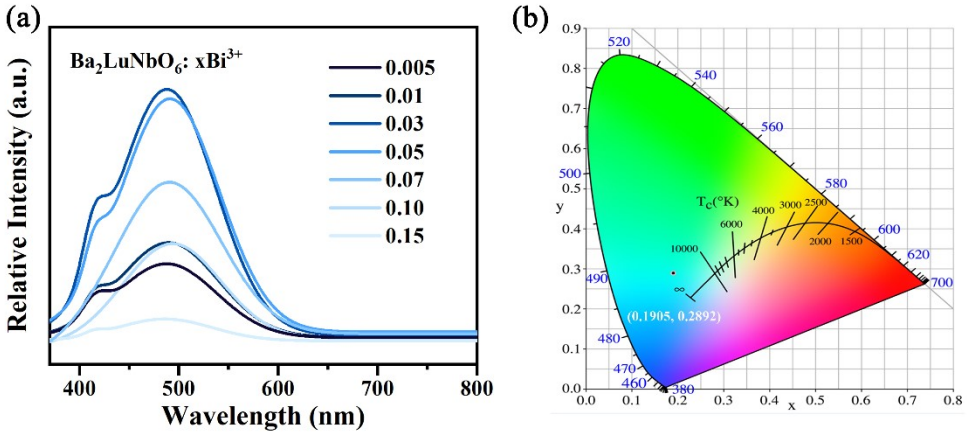

Fig. S1 *(a) PL spectra of Ba_2LuNbO_6: x Bi^{3+} (x = 0.005, 0.01, 0.03, 0.05, 0.07, 0.10, and 0.15); (b) the corresponding chromaticity coordinates of Ba_2LuNbO_6: 0.03 Bi^{3+} under333nm excitation.*

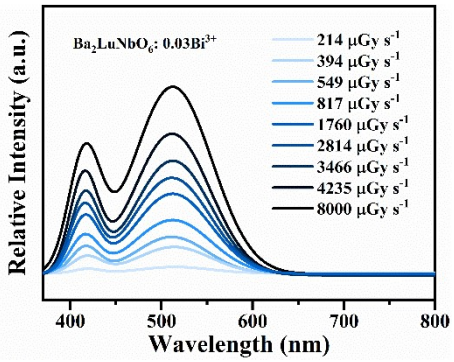

Fig. S2 *(a) Dose dependent RL intensity of Ba_2LuNbO_6: 0.03 Bi^{3+}.*

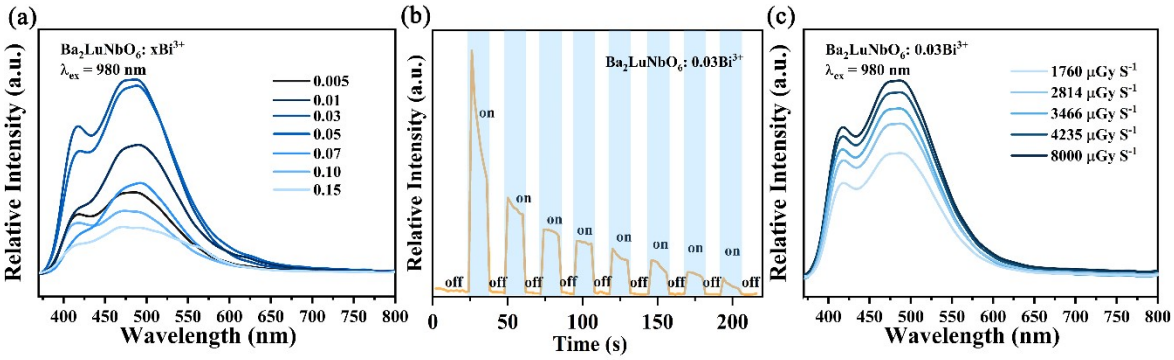

Fig. S3 *(a) PSL intensity as a function of Ba_2LuNbO_6: x Bi^{3+} (x = 0.005, 0.01, 0.03, 0.05, 0.07, 0.10, and 0.15) after X-ray pre-irradiated 900 s; (b) PSL intensity with time prolonging under the excitation of a 980 nm laser diode; (c) PSL spectra of Ba_2LuNbO_6: 0.03 Bi^{3+} with different X-ray dose rate.*

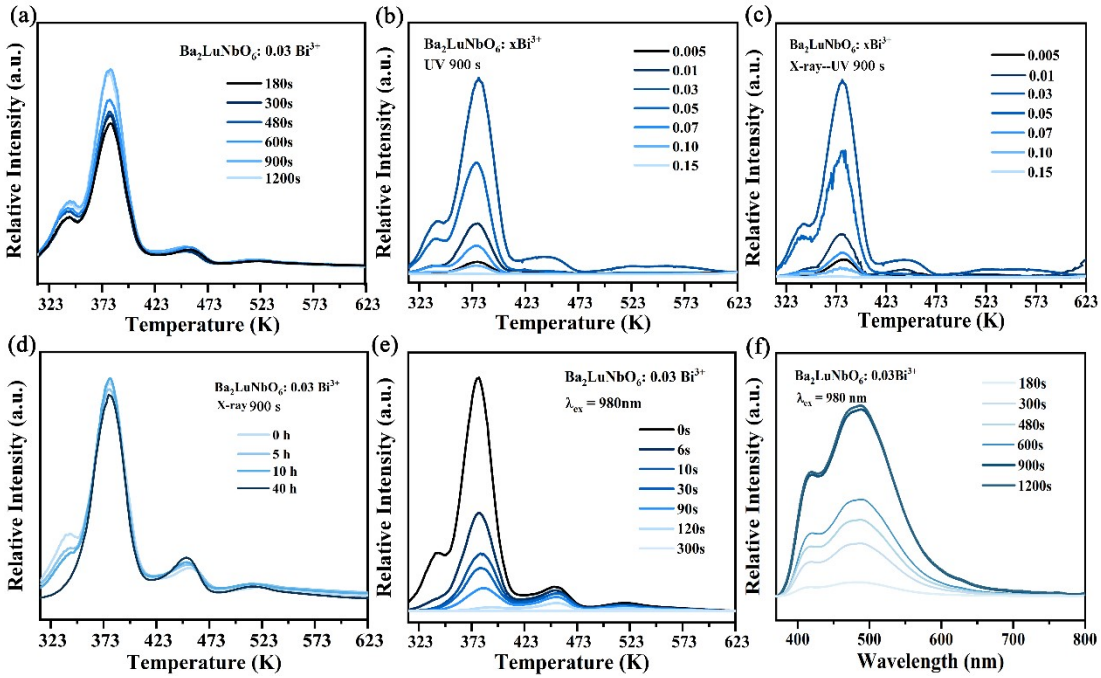

Fig. S4 *(a) TL curves of Ba_2LuNbO_6: 0.03 Bi^{3+} under X-ray irradiation with different time; (b) TL curves of Ba_2LuNbO_6: x Bi^{3+} (x = 0.005, 0.01, 0.03, 0.05, 0.07, 0.10, and 0.15) recorded immediately after UV light pre-irradiated 900 s; (c) TL curves of Ba_2LuNbO_6: xBi^{3+} (x = 0.005, 0.01, 0.03, 0.05, 0.07, 0.10, and 0.15) recorded immediately after X-ray pre-irradiated 900 s with UV light tested; (d) the corresponding time-dependent TL curves of Ba_2LuNbO_6: 0.03 Bi^{3+} with X-ray pre-irradiated 900 s; (e) TL curves of Ba_2LuNbO_6: 0.03 Bi^{3+} with X-ray pre-irradiated 900 s with the excitation of 980 nm; (f) PSL spectra of Ba_2LuNbO_6: 0.03 Bi^{3+} recorded for prolonged time for X-ray irradiation.*