Electronic Supplementary Material (ESI) for Dalton Transactions.

Supporting Information

Multi-peaked Broad-band Red Phosphor $Y_3Si_6N_{11}:Pr^{3+}$ for White LEDs and Temperature Sensing

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Table S1 Crystallographic data for $Y_3Si_6N_{11}$.

Formula	$Y_3Si_6N_{11}$
Formula weight	606.373
Crystal system	Monoclinic
Space group	$P2_1/c$ (No. 14)
a (Å)	5.937(1)
b (Å)	9.882(1)
c (Å)	11.890(1)
α (°)	90.00000
β (°)	119.628(1)
γ (°)	90.00000
R_p (%)	8.40
R_{wp} (%)	8.89

Table S2 Atomic coordinates for $Y_3Si_6N_{11}$. All atoms occupy the 4e site of space grope $P2_1/c$.

Atom	x	y	z
Y1	0.335(1)	0.564(1)	0.096(1)
Y2	0.658(1)	0.414(1)	0.419(1)
Si1	0.004(3)	0.484(1)	0.250(1)
Si2	0.183(3)	0.211(1)	0.424(1)
Si3	0.200(2)	0.209(1)	0.175(1)
Si4	0.679(2)	0.226(1)	0.167(1)
N1	0.028(5)	0.204(3)	-0.016(2)
N2	0.048(4)	0.051(3)	0.396(2)
N3	0.233(4)	0.040(2)	0.225(2)
N4	0.503(8)	0.290(2)	0.009(3)
N5	0.485(7)	0.264(2)	0.241(2)
N6	0.690(5)	0.057(3)	0.134(2)
N7	0.065(4)	0.301(2)	0.272(2)

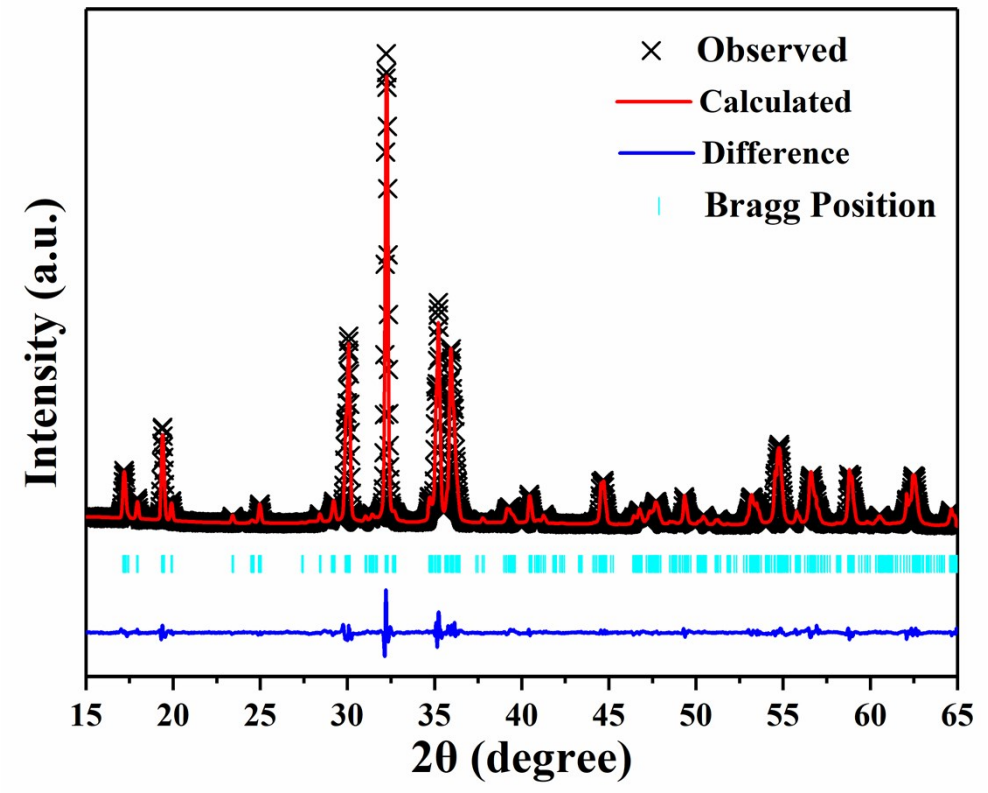

Figure S1 Rietveld refinements of XRD data for YSN:8‰Pr^{3+}.

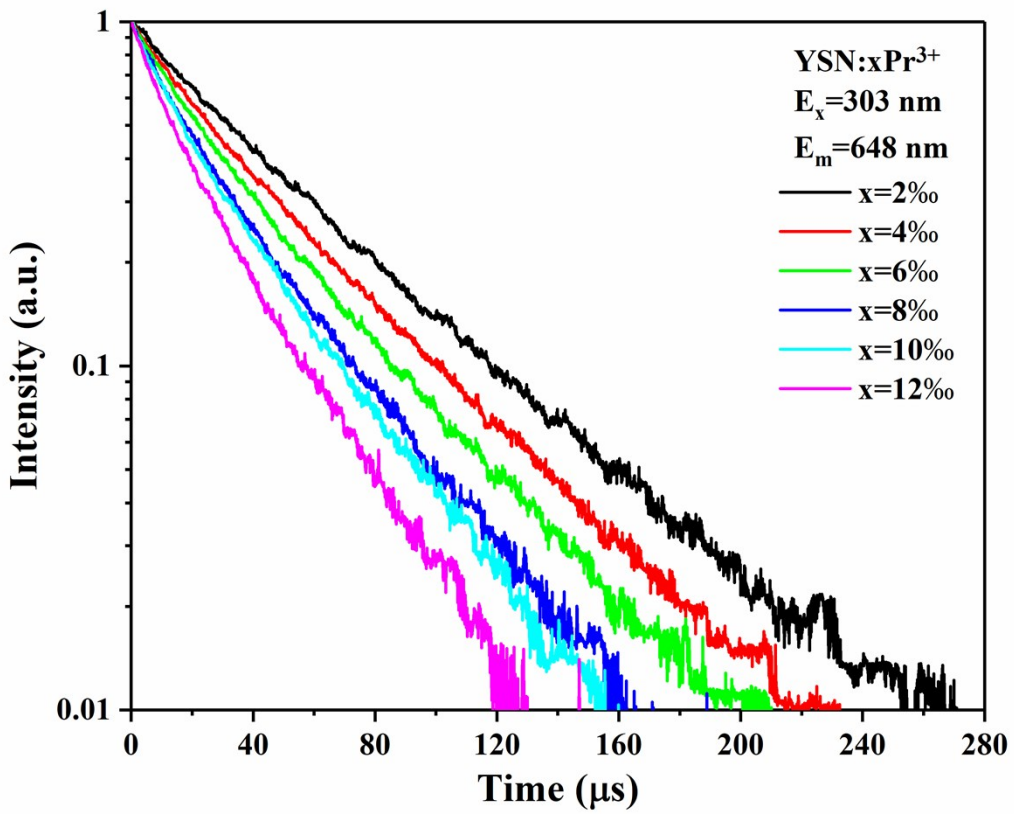

Figure S2 The fluorescence decay curves of YSN:xPr^{3+} (x=2‰-12‰).