Electronic Supplementary Material (ESI)

Synthesis and optical spectroscopies of Eu^{3+} doped in $Na_3Y(VO_4)_2$ phosphors for display and thermometry applications

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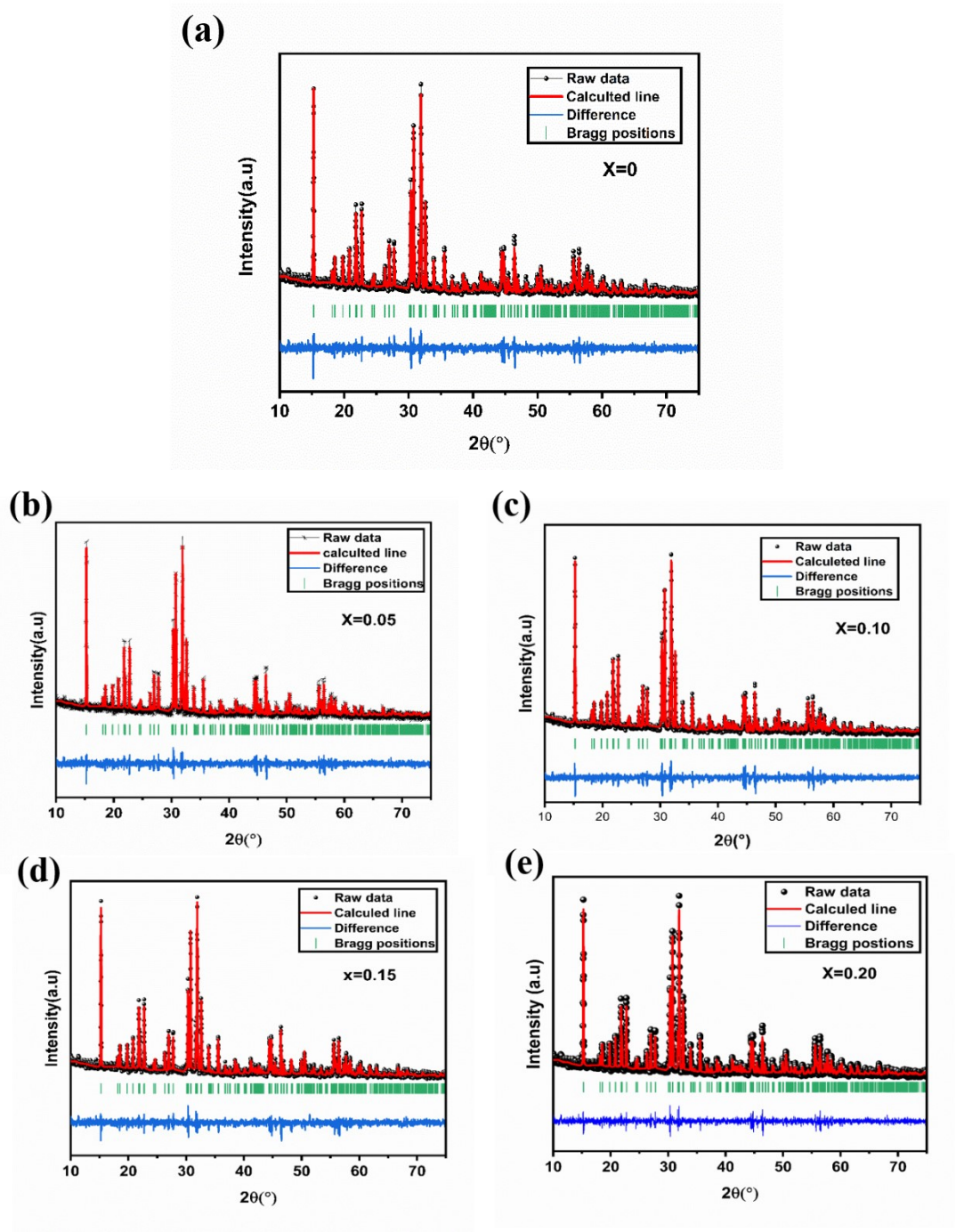

Fig S1 : *S1 (a-e)*: The Rietveld structure refinement results of NYVO:xEu^{3+} (x =0.00,0.05,0.10,0.15and 0.2) phosphors

Table S1 : 1 The unit cell parameters and volume of $Na_3Y(VO_4)_2$: x Eu^{3+} (x = 0, 0.05, 0.10, 0.15, 0.20).

	a (Å)	*b*(Å)	*c*(Å)	*β*(°)	Unit cell volume (Å^3)	R_{WP} (weighted profile factor)	χ^2
X=0	7.2342	9.7645	5.5034	92.9904	388.2217	9.89	1.97
X=0.05	7.2273	9.7671	5.5097	93.0218	388.3876	10.82	1.89
X= 0.10	7.2168	9.7698	5.5134	93.0350	388.1863	9.96	2.11
X=0.15	7.2105	9.7783	5.5208	93.0366	388.7053	10.14	2.07
X= 0.20	7.2088	9.7874	5.5301	93.0467	388.6269	10.39	2.15

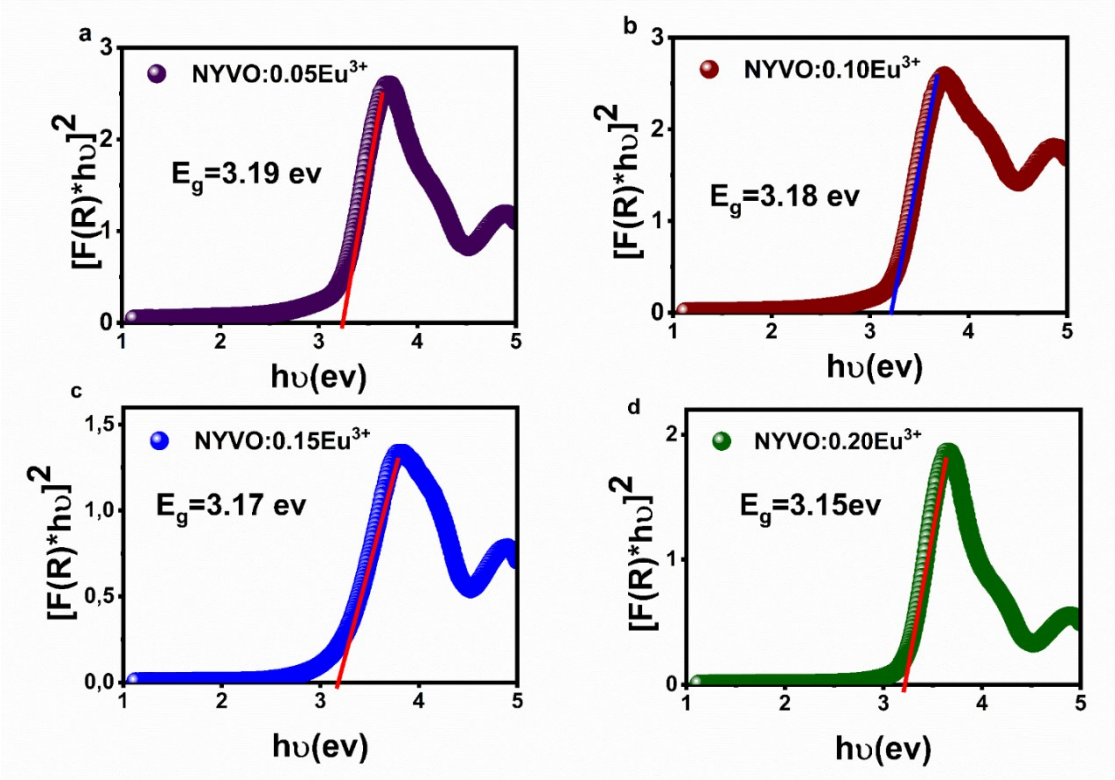

Fig S2: Plot of [F(R) × hν]2 versus hν for the band gap energy of NYVO:xEu^{3+}

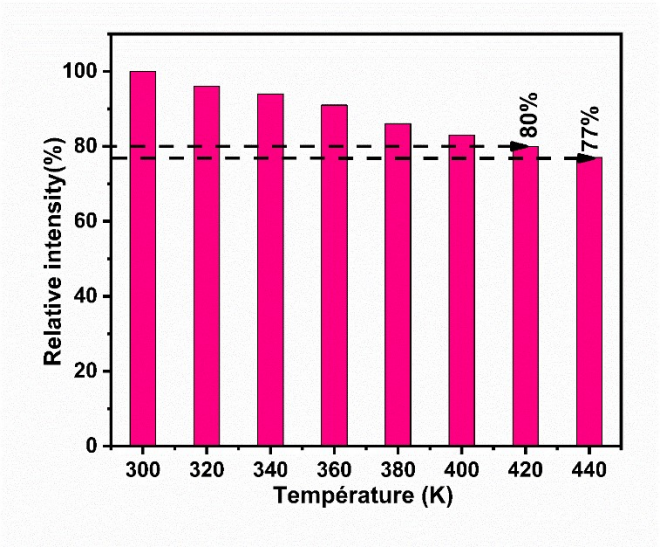

Fig S3: The normalized PL intensity as a function of temperature

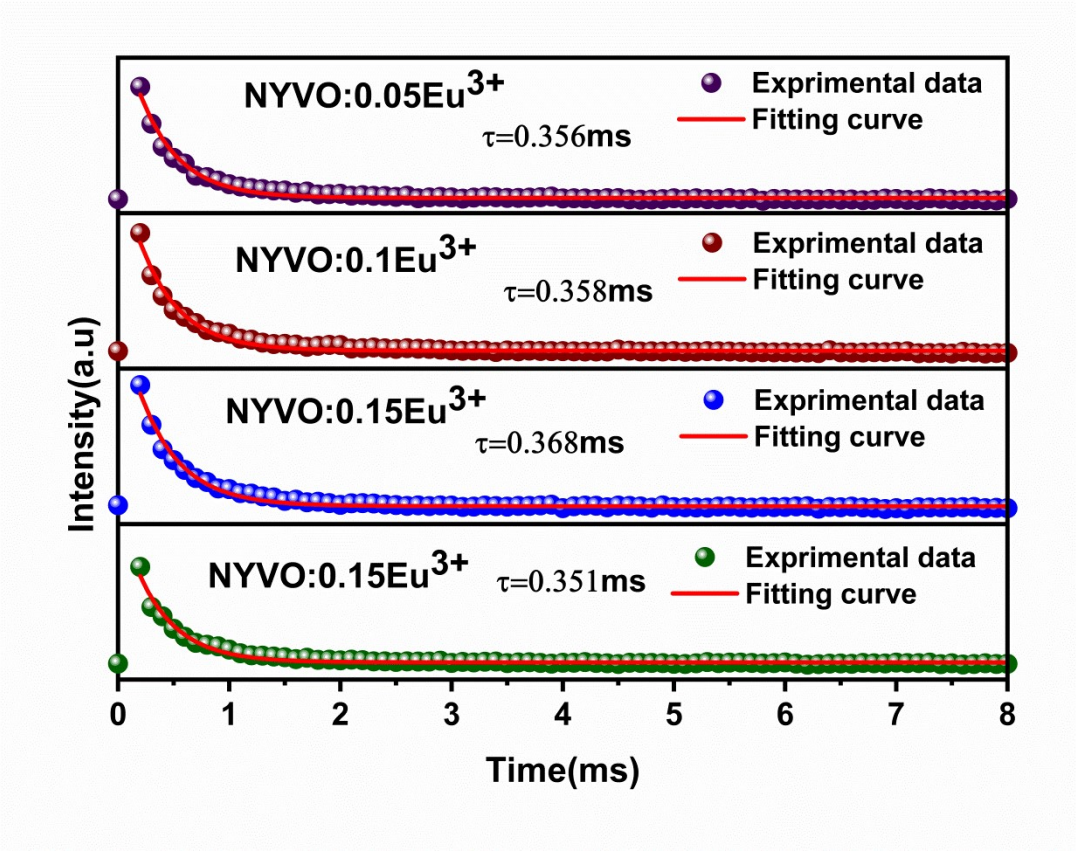

Fig S4:Decay curves of 615 nm emissions of NYVO:xEu3+ (X=0.05,0.1,0.15and 0.2) sample (λ_{ex}=395nm)