

High Thermal Stability and Color Purity of $\text{Y}_2\text{SrAl}_4\text{SiO}_{12}:\text{Eu}^{3+}$ Garnet-Varia nt-Structured Phosphor for Warm White Light LED-Lamp

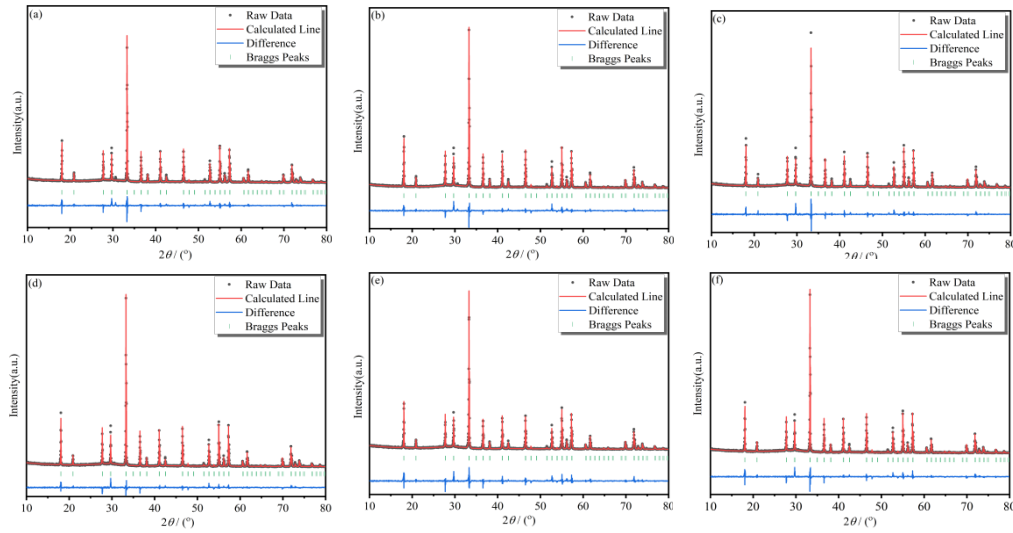


Figure S1. (a–f) are the refined structures of $\text{YSAS}: x\text{Eu}^{3+}$ ($x = 0.05\text{--}0.35$) phosphors, respectively.

Table S1 Refinement results of $\text{YSAS}: x\text{Eu}^{3+}$ ($x = 0.05\text{--}0.35$) phosphors.

Formula	YSAS: 0.05Eu^{3+}	YSAS: 0.1Eu^{3+}	YSAS: 0.15Eu^{3+}
Space group	<i>Ia3d</i>	<i>Ia3d</i>	<i>Ia3d</i>
Volume (\AA^3)	1742.467	1742.545	1742.611
Lattice parameters (\AA)	a=12.03479 b=12.03479 c=12.03479	a=12.03497 b=12.03497 c=12.03497	a=12.03514 b=12.03514 c=12.03514
$R_{\text{wp}}(\%)$	9.02	8.12	8.61
$R_{\text{p}}(\%)$	9.36	9.42	8.19
$\chi^2(\%)$	3.29	3.01	2.77

Formula	YSAS: 0.2Eu ³⁺	YSAS: 0.25Eu ³⁺	YSAS: 0.35Eu ³⁺
Space group	<i>Ia3d</i>	<i>Ia3d</i>	<i>Ia3d</i>
Volume (Å ³)	1742.759	1742.898	1742.992
Lattice parameters (Å)	a=12.03546 b=12.03546 c=12.03546	a=12.03556 b=12.03556 c=12.03556	a=12.03579 b=12.03579 c=12.03579
R _{wp} (%)	9.17	9.52	8.54
R _p (%)	8.11	7.85	7.86
χ ² (%)	2.35	4.63	2.24