

## **Supplementary Information**

**Title:** Electronic structure and photoluminescence properties of single component white emitting  $\text{Sr}_3\text{LuNa}(\text{PO}_4)_3\text{F}:\text{Eu}^{2+},\text{Mn}^{2+}$  phosphor for WLEDs

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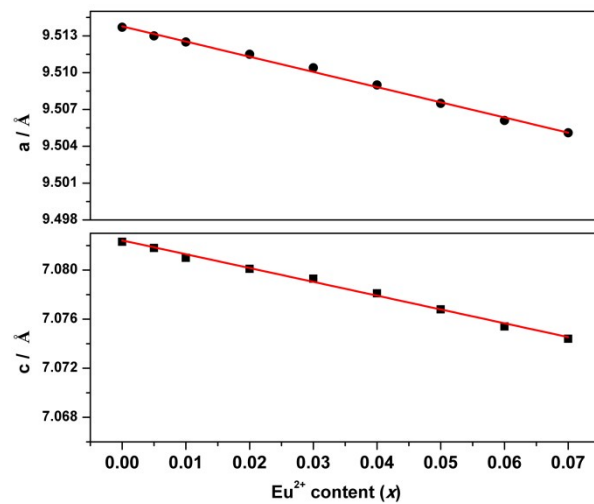


Fig. S1. Dependence of lattice parameters  $a$  and  $c$  on doping content of  $\text{Eu}^{2+}$  for  $\text{SLuNPF}:x\text{Eu}^{2+}$  samples.

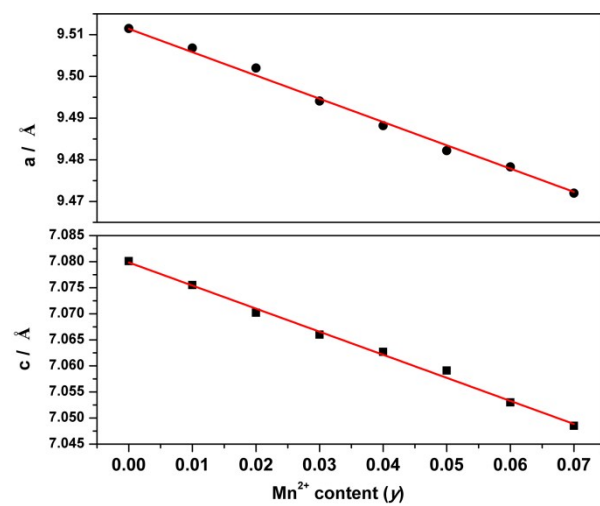


Fig. S2. Dependence of lattice parameters  $a$  and  $c$  as on  $\text{Mn}^{2+}$  doping content for  $\text{SLuNPF}:0.02\text{Eu}^{2+},y\text{Mn}^{2+}$  samples.

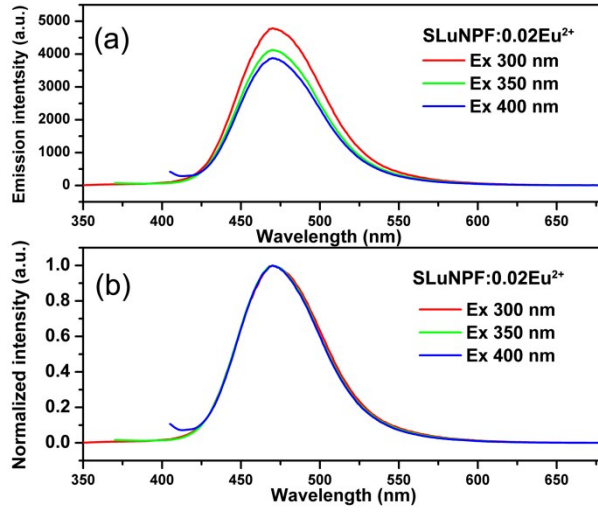


Fig. S3. (a) Emission spectra of SLuNPF:0.02Eu<sup>2+</sup> under different excitation.

(b) Normalized emission spectra of SLuNPF:0.02Eu<sup>2+</sup> under different excitation.

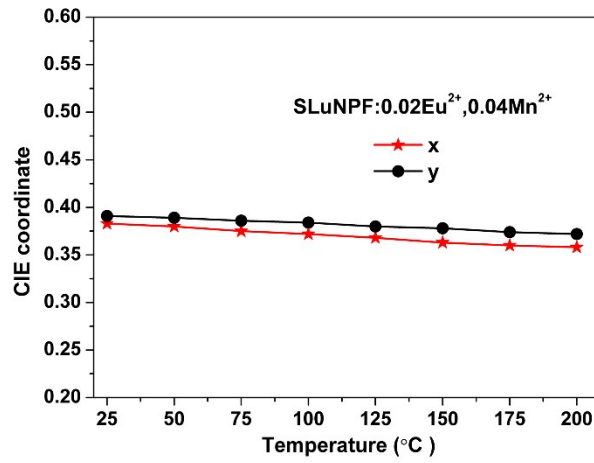


Fig. S4. CIE coordinates of SLuNPF:0.02Eu<sup>2+</sup>,0.04Mn<sup>2+</sup> phosphor at different temperatures.