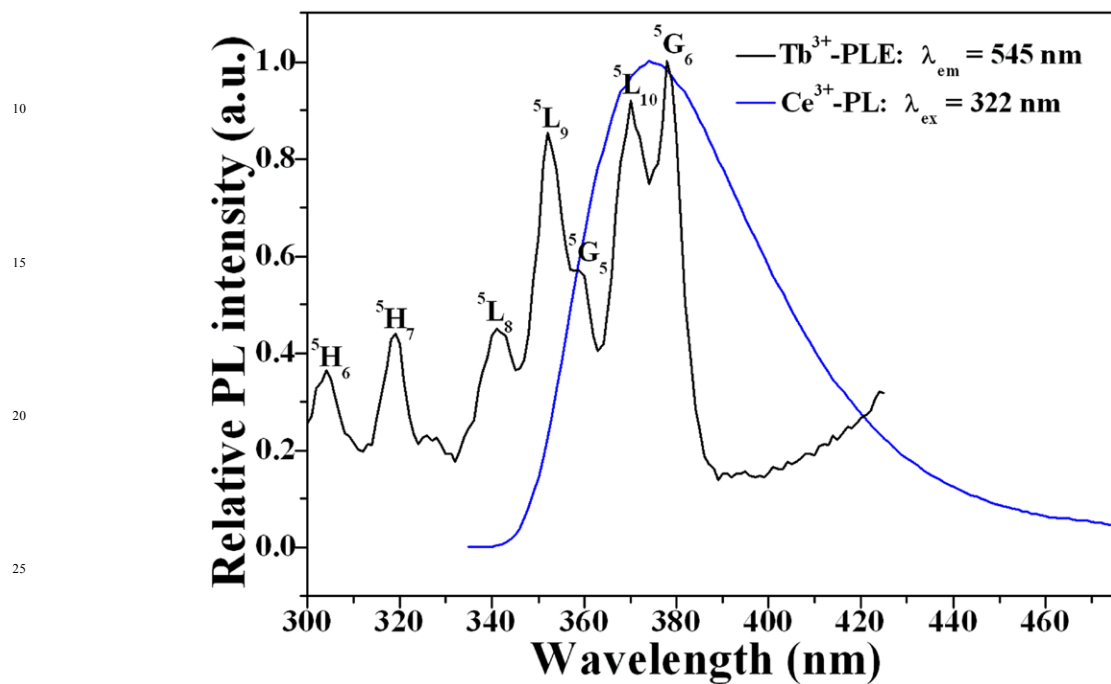


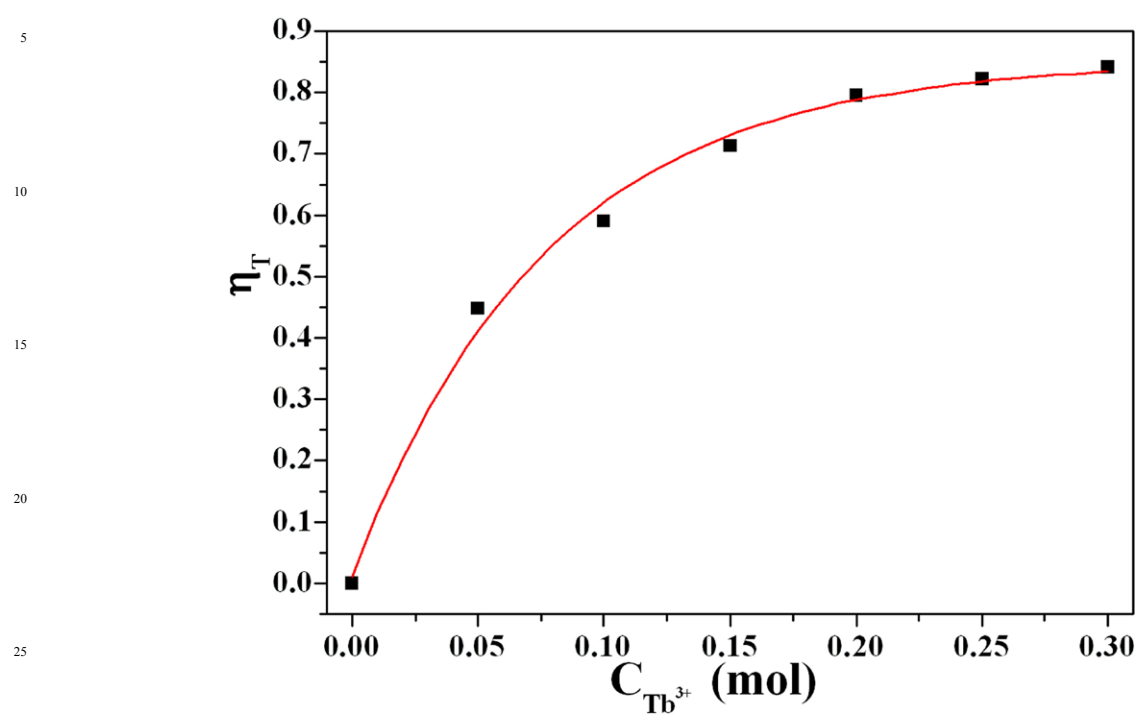
## Supporting Information

### **Title:** Color Tuning via Energy Transfer in $\text{Sr}_3\text{In}(\text{PO}_4)_3: \text{Ce}^{3+}/\text{Tb}^{3+}/\text{Mn}^{2+}$ Phosphors

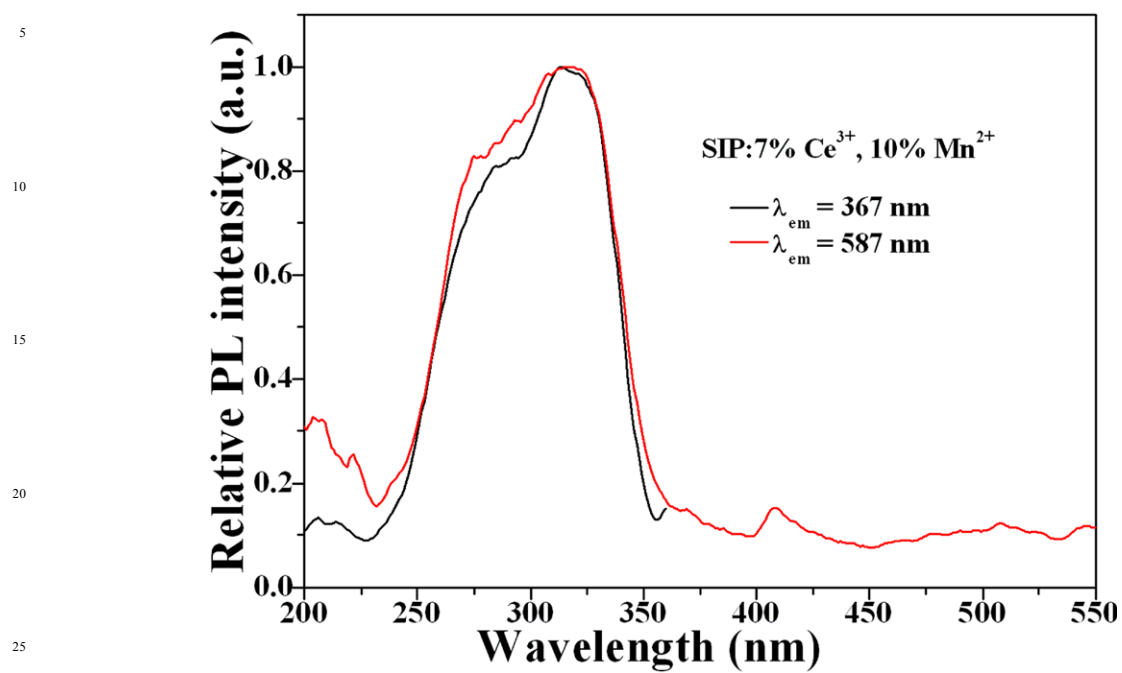
**Author(s):** Dongling Geng,<sup>a,b</sup> Guogang Li,<sup>a,b</sup> Mengmeng Shang,<sup>a,b</sup> Dongmei Yang,<sup>a,b</sup> Yang Zhang,<sup>a,b</sup> Ziyong Cheng<sup>a</sup> and Jun Lin<sup>a,z</sup>



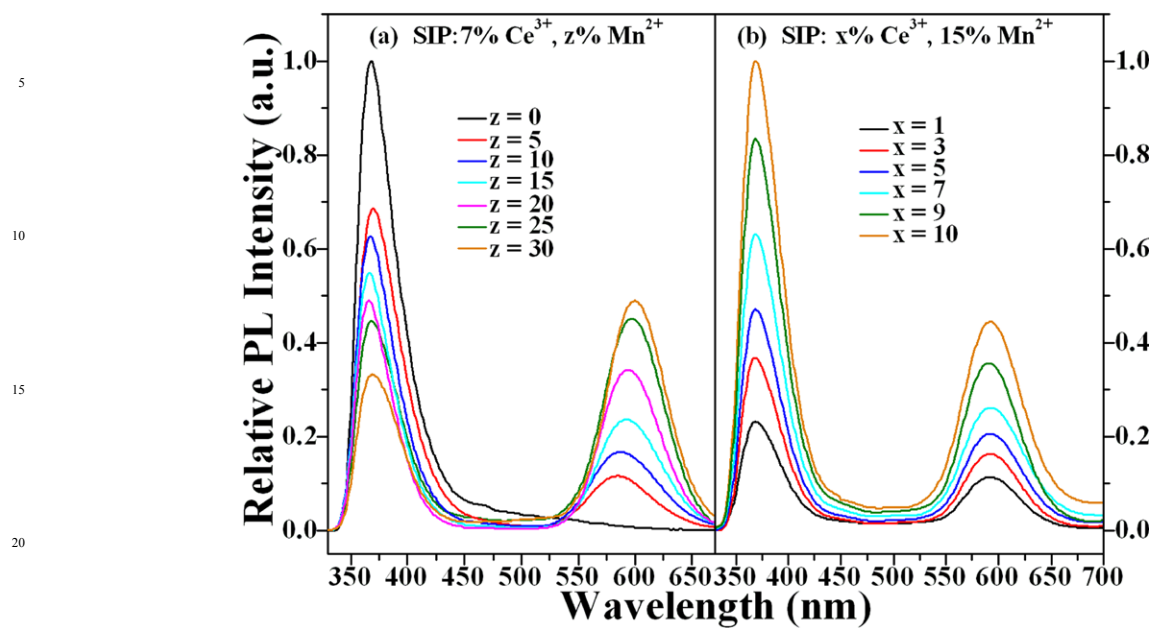
**Fig. S1.** Spectral overlap between the normalized PL spectrum of SIP: 7%  $\text{Ce}^{3+}$  and the PLE spectrum of SIP: 5%  $\text{Tb}^{3+}$ .



**Fig. S2.** Energy transfer efficiency from  $Ce^{3+}$  to  $Tb^{3+}$  in SIP: 7%  $Ce^{3+}$ , y%  $Tb^{3+}$  samples ( $\lambda_{ex} = 318$  nm).



**Fig. S3.** Excitation spectra of SIP: 7% Ce<sup>3+</sup>, 10% Mn<sup>3+</sup> monitored at 367 and 587 nm.



25 **Fig. S4.** The variation of PL spectra and emission intensity of Ce<sup>3+</sup> and Mn<sup>2+</sup> in the SIP: Ce<sup>3+</sup>, Mn<sup>2+</sup> system with changing Mn<sup>2+</sup> and fixed Ce<sup>3+</sup> (a) and fixed Mn<sup>2+</sup> and changing Ce<sup>3+</sup> (b) doping concentration. ( $\lambda_{\text{ex}} = 318 \text{ nm}$ )

30

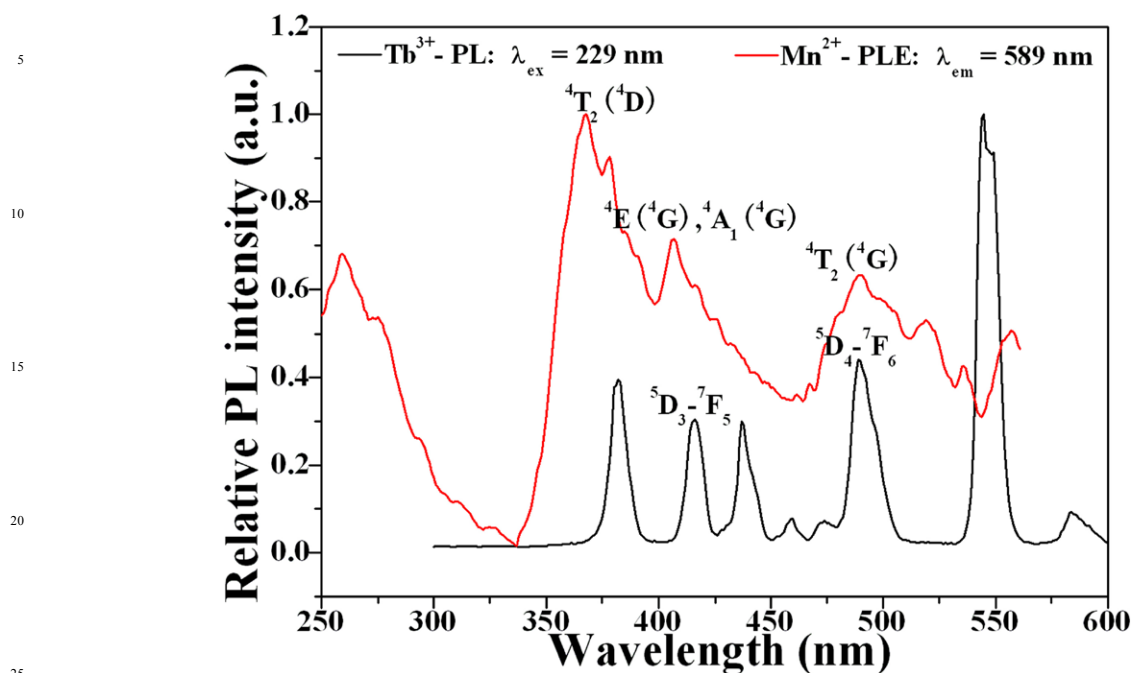
35

40

45

50

55



**Fig. S5.** Spectral overlap between the normalized PL spectrum of SIP: 5%  $\text{Tb}^{3+}$  and the PLE spectrum of SIP: 7%  $\text{Mn}^{2+}$ .

**Table S1.** Cell parameters of SIP:  $\text{Ce}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Tb}^{3+}$  samples at different  $\text{Ce}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Tb}^{3+}$  concentrations.

Sample	Cell parameter	$a = b = c$ (Å)	$V$ (Å <sup>3</sup> )
SIP		10.068	1020.54
SIP : 2% $\text{Ce}^{3+}$		10.077	1023.28
SIP : 7% $\text{Ce}^{3+}$		10.086	1026.02
SIP : 3% $\text{Tb}^{3+}$		10.076	1022.97
SIP : 7% $\text{Tb}^{3+}$		10.08	1024.19
SIP : 3% $\text{Mn}^{2+}$		10.035	1010.54
SIP : 10% $\text{Mn}^{2+}$		10.018	1005.41
SIP : 7% $\text{Ce}^{3+}$ , 4% $\text{Mn}^{2+}$		10.064	1019.32
SIP : 7% $\text{Ce}^{3+}$ , 5% $\text{Tb}^{3+}$		10.083	1025.11
SIP : 5% $\text{Tb}^{3+}$ , 7% $\text{Mn}^{2+}$		10.053	1015.98