

Supporting Information:

Zero-thermal-quenching and photoluminescence tuning with the assistance of carriers from defect cluster traps

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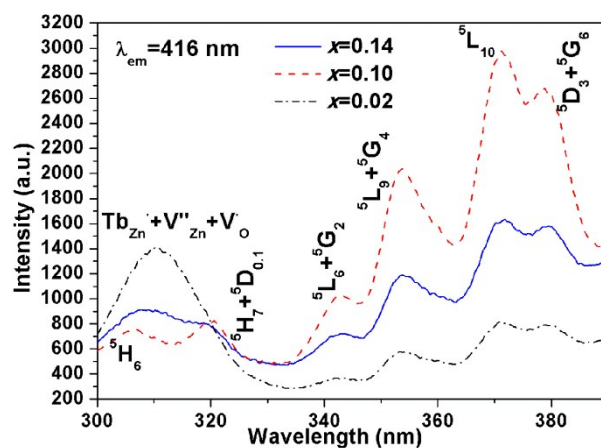


Fig. S1 The PLE spectra of SZSPO: $x\text{Tb}^{3+}$ phosphors ($x=0.02, 0.10$ and 0.14) ($\lambda_{\text{em}}=416$ nm).

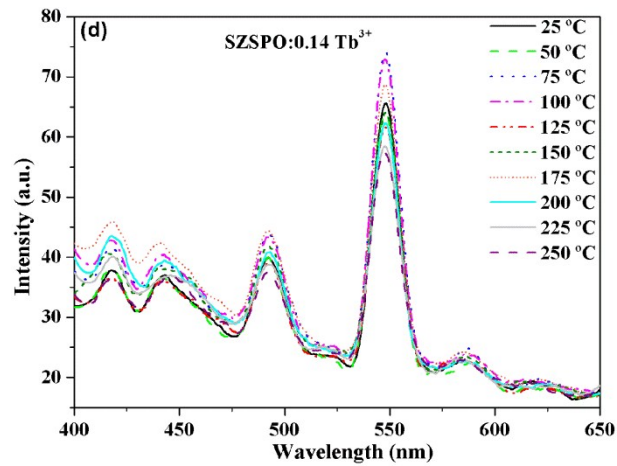
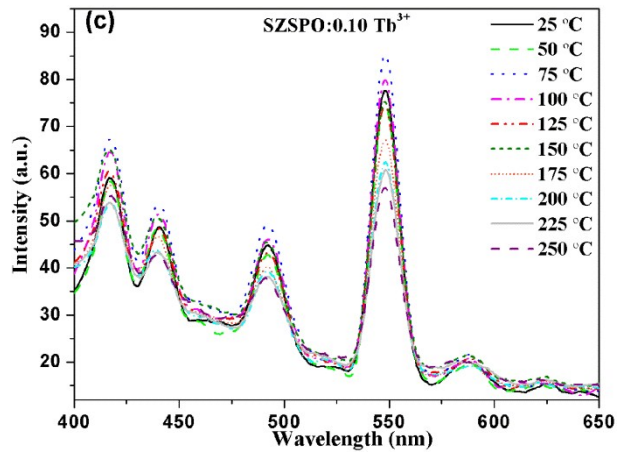
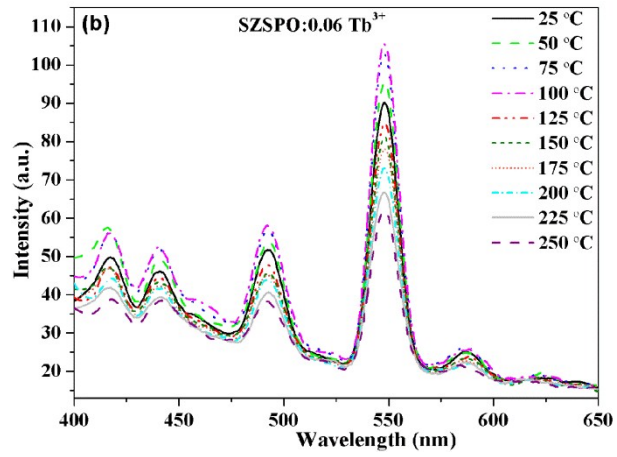
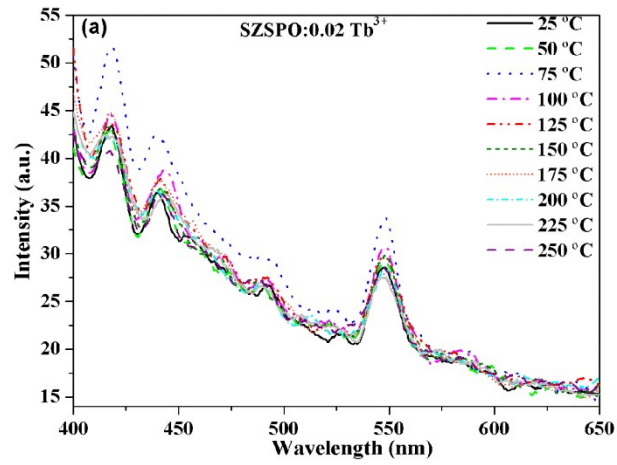


Fig. S2 Temperature-dependent emission spectra of SZSPO: x Tb³⁺ phosphor under 370 nm excitation in the temperature range of 25-250 °C, (a) $x=0.02$; (b) $x=0.06$; (c) $x=0.10$; (d) $x=0.14$.