Electronic Supplementary Material (ESI) for Materials Advances.

Supplementary Information

Improving temperature sensing performance of $SrZn_{0.33}Nb_{0.67}O_3$: Pr^{3+} phosphor via Ga^{3+} doping

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Fig. S1

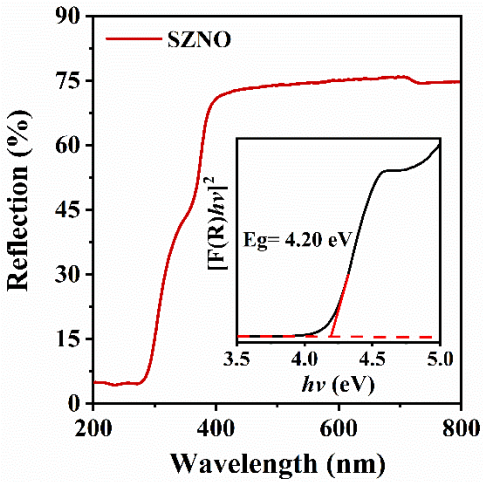

Fig. S1 The ultraviolet visible diffuse reflectance spectra (UV vis DRS) of the $SrZn_{0.33}Nb_{0.67}O_3$ host.

Fig. S2

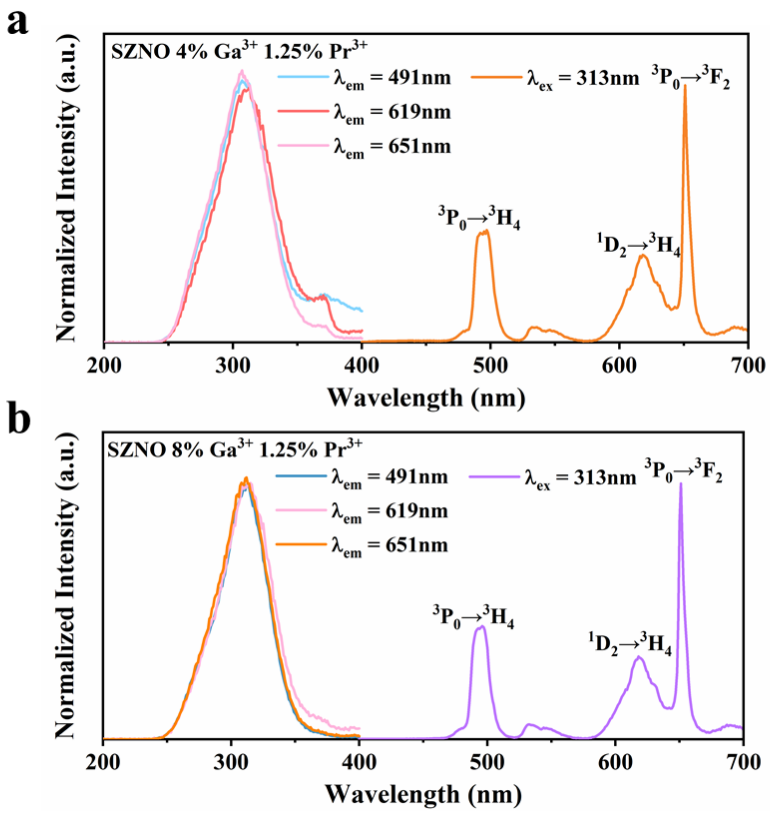

Fig. S2 The PL spectrum (λ_{ex}=313 nm) and PLE spectra (λ_{em} = 491 nm, 619 nm, 651nm) of the (a) $SrZn_{0.33}Nb_{0.67}O_3$: 4% Ga^{3+}, 1.25% Pr^{3+} and (b) $SrZn_{0.33}Nb_{0.67}O_3$: 8% Ga^{3+}, 1.25% Pr^{3+}.

Fig. S3

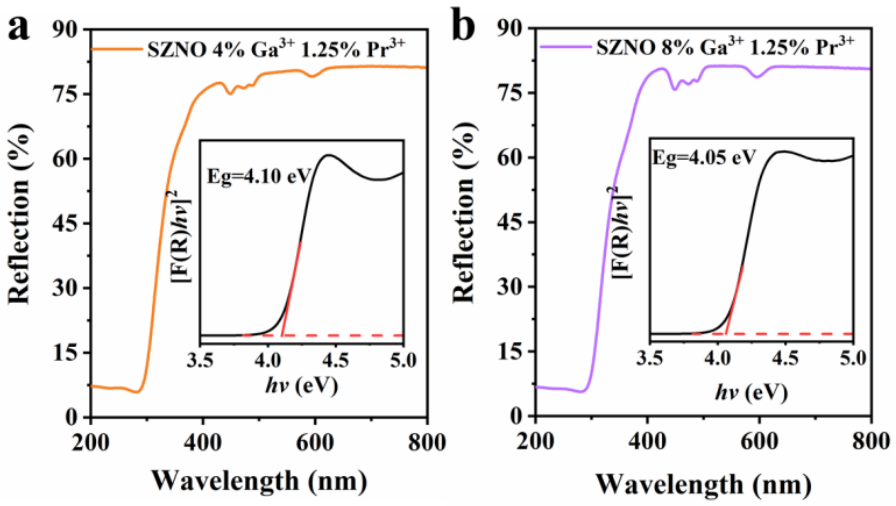

Fig. S3 The ultraviolet visible diffuse reflectance spectra (UV vis DRS) of the (a) $SrZn_{0.33}Nb_{0.67}O_3$: 4% Ga^{3+}, 1.25% Pr^{3+} and (b) $SrZn_{0.33}Nb_{0.67}O_3$: 8% Ga^{3+}, 1.25% Pr^{3+}; the insets show the relationship of $[F(R)hv]^2$ versus energy hv.

Fig. S4

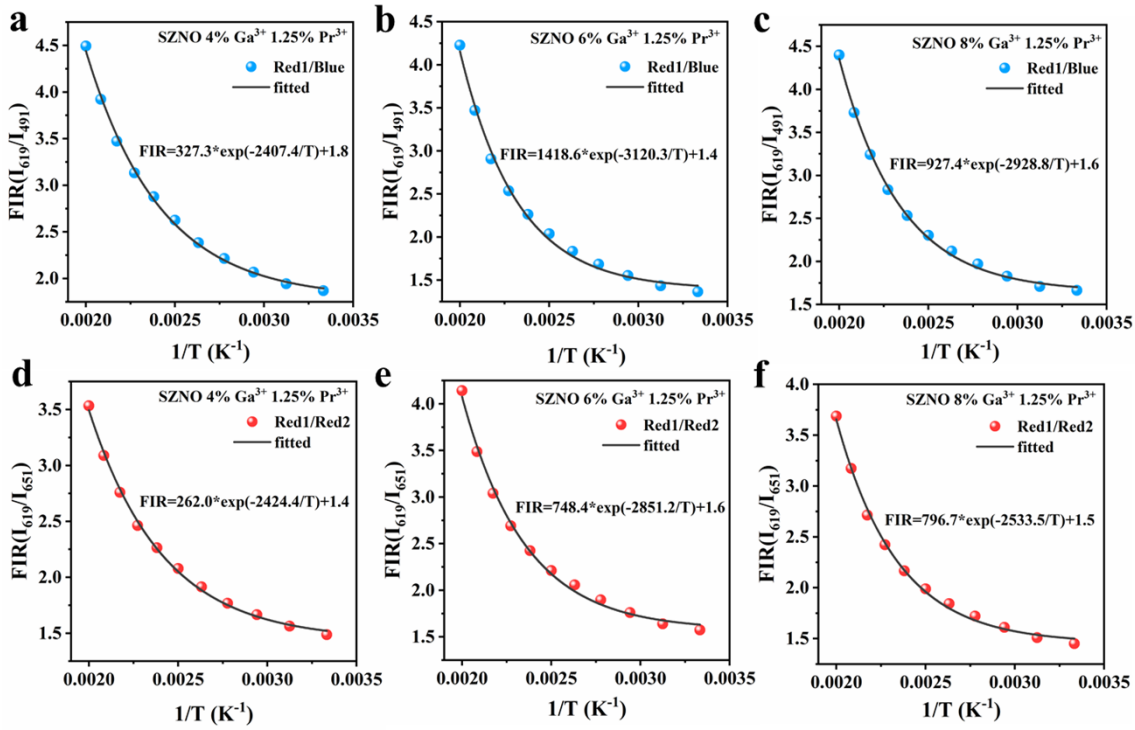

Fig. S4 (a-c) Experimentally measured and Eq. 6 fitted plots of FIR (I_{619}/I_{491}) versus temperature of the $SrZn_{0.33}Nb_{0.67}O_3$: y% Ga^{3+}, 1.25% (y=4/6/8); (d-f)Experimentally measured and Eq. 6 fitted plots of FIR (I_{619}/I_{651}) versus temperature of the $SrZn_{0.33}Nb_{0.67}O_3$: y% Ga^{3+}, 1.25% (y=4/6/8).