Electronic Supporting Information

Enhanced Luminescence of Mn^{4+}: $Y_3Al_5O_{12}$ Red Phosphor via Impurity Doping

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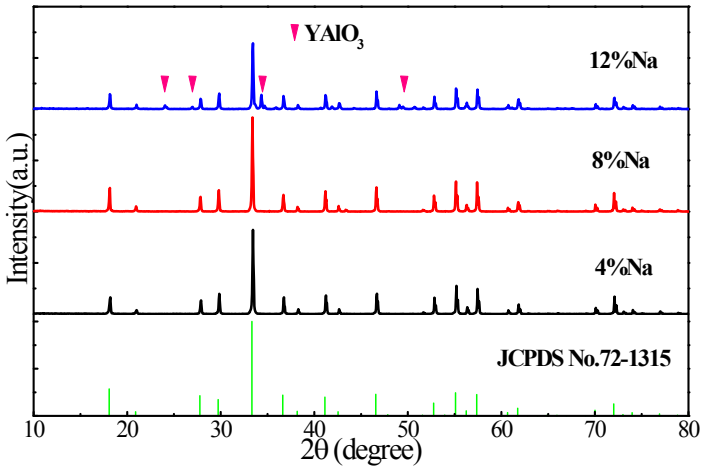

Figure S1. XRD patterns of Mn^{4+}/Na^{+} (0.1/y, mol%): YAG (y= 4, 8, 12) phosphors

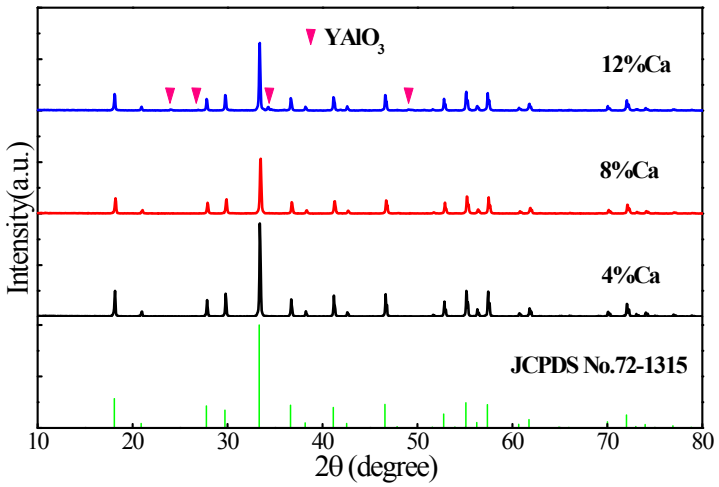

Figure S2. XRD patterns of Mn^{4+}/Ca^{2+} (0.1/y, mol%): YAG (y= 4, 8, 12) phosphors

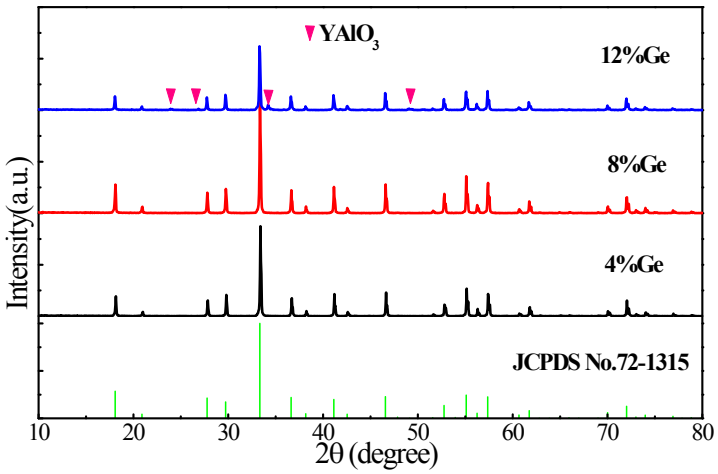

Figure S3. XRD patterns of Mn^{4+}/Ge^{4+} (0.1/y, mol%): YAG (y= 4, 8, 12) phosphors

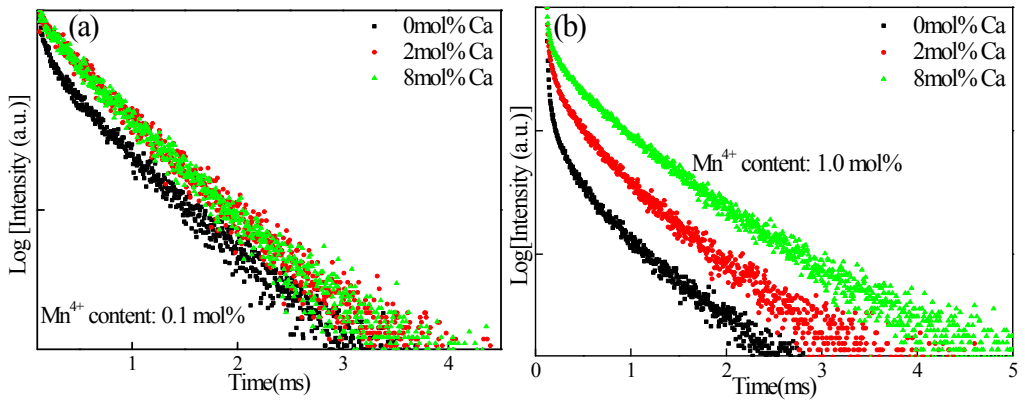

Figure S4. Decay curves of Mn^{4+}: ^2E excited state (λ_{em}=673 nm) in (a) Mn^{4+}/Ca^{2+}(0.1/y, mol%): YAG and (b) Mn^{4+}/Ca^{2+} (1.0/y, mol%): YAG (y=0, 2, 8) under 352 nm UV light excitation.

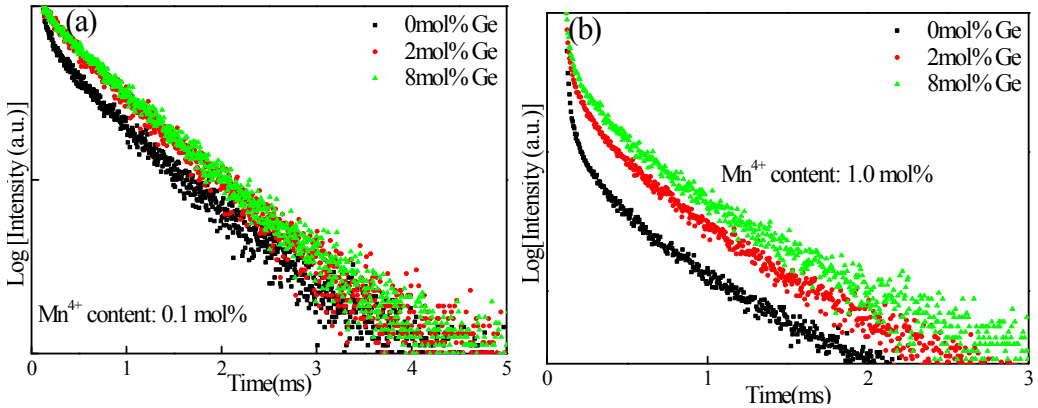

Figure S5. Decay curves of Mn^{4+}: ^2E excited state (λ_{em}=673 nm) in (a) Mn^{4+}/Ge^{4+}(0.1/y, mol%): YAG and (b) Mn^{4+}/Ge^{4+} (1.0/y, mol%): YAG (y=0, 2, 8) under 352 nm UV light excitation.

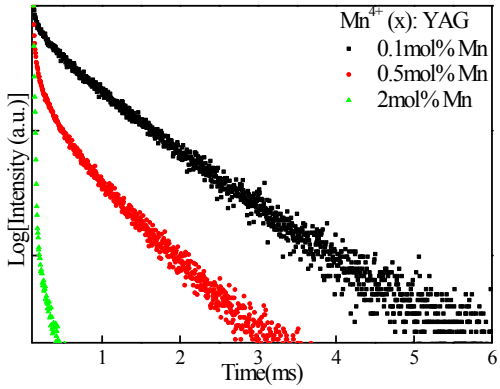

Figure S6. Mn^{4+} content dependent decay curves of Mn^{4+}: ^2E state (λ_{em}= 673 nm) in Mn^{4+}: YAG under 352 nm light excitation.

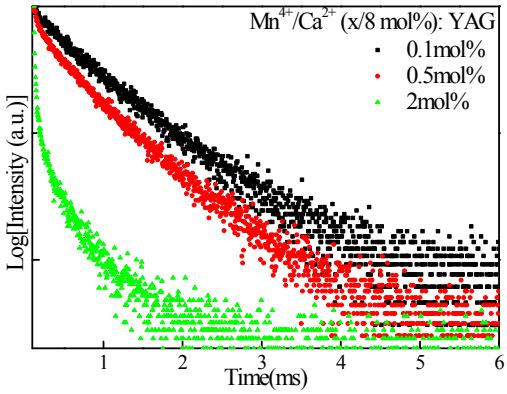

Figure S7. Mn^{4+} content dependent decay curves of Mn^{4+}: ^2E state (λ_{em}= 673 nm) in Mn^{4+}/Ca^{2+}: YAG under 352 nm light excitation.

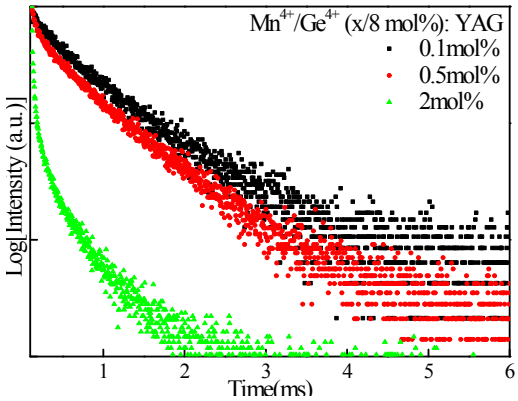

Figure S8. Mn^{4+} content dependent decay curves of Mn^{4+}: ^2E state (λ_{em}= 673 nm) in Mn^{4+}/Ge^{4+}: YAG under 352 nm light excitation.