Supporting Information

Novel SrGd₂Al₂O₇:Mn⁴⁺,Nd³⁺,Yb³⁺ phosphors for c-Si solar cells

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Figure S1. PL emission spectra of the different Mn^{4+} contents doped in the SGA:e Mn^{4+} ,0.02Nd³⁺(a) and SGA:f Mn^{4+} ,0.02Yb³⁺ (b).



Figure S2. Variation of emission spectra of SGA:0.02Nd³⁺,yYb³⁺ samples excited at 587 nm.



Figure S3. Decay curves ($\lambda_{ex} = 587 \text{ nm}$, $\lambda_{em} = 1081 \text{ nm}$) for Nd³⁺ emissions in SGA: 0.02Nd³⁺,yYb³⁺ (y = 0.01-0.06).



Figure S4. Decay curves ($\lambda_{ex} = 587 \text{ nm}$, $\lambda_{em} = 1081 \text{ nm}$) for Nd³⁺ emissions in SGA:0.0008Mn⁴⁺,0.02Nd³⁺,cYb³⁺ (c = 0.02-0.08).