Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting information

Topological tailoring of structure and defects to enhance red to near-infrared afterglow from Mn^{2+}-doped germanate photonic glasses

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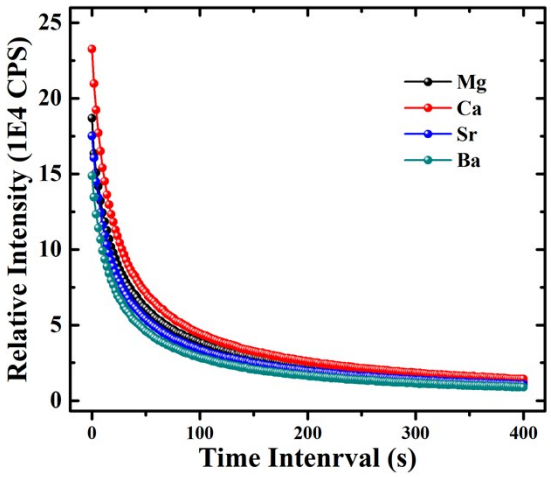

Fig. S1 Afterglow decay curves of samples GA*M* (*M* = Mg, Ca, Sr, Ba).

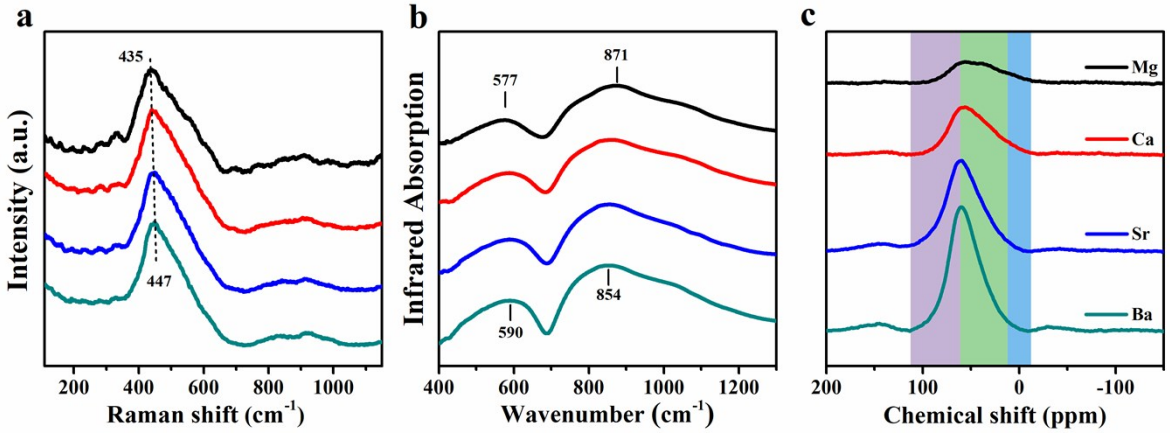

Fig. S2 (a) Raman spectra and (b) FTIR spectra and (c) ^{27}Al 1D MAS NMR spectra (400 MHz) of samples GA*M* (*M* = Mg, Ca, Sr, Ba).

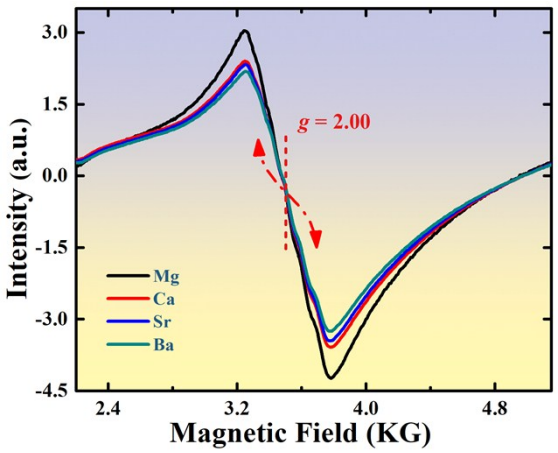

Fig. S3 EPR spectra of samples GA*M* (*M* = Mg, Ca, Sr, Ba).

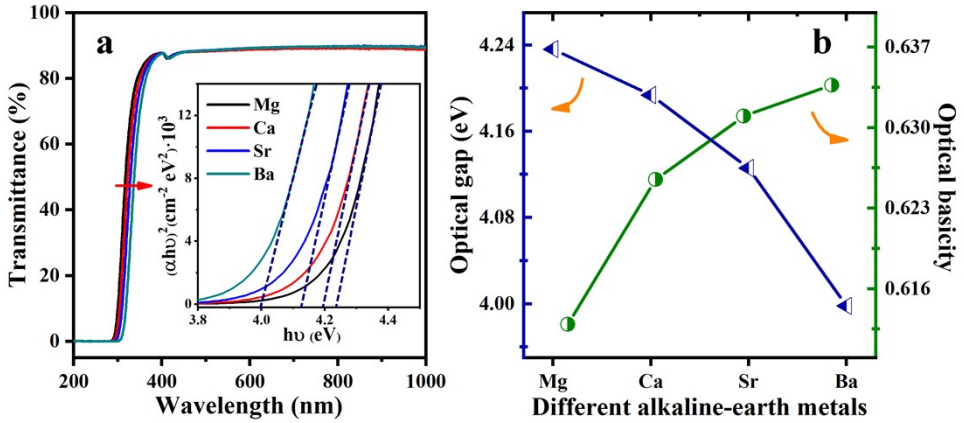

Fig. S4 (a) UV-vis transmission spectra of the GA*M* (*M* = Mg, Ca, Sr, Ba) samples; inset is the plots of {$(\alpha h\nu)^2$*vs*. ($h\nu$)} demonstrated direct optical band gap (E_g). (b) Dependence curves of the optical basicity and optical band gap on different alkaline-earth metals.

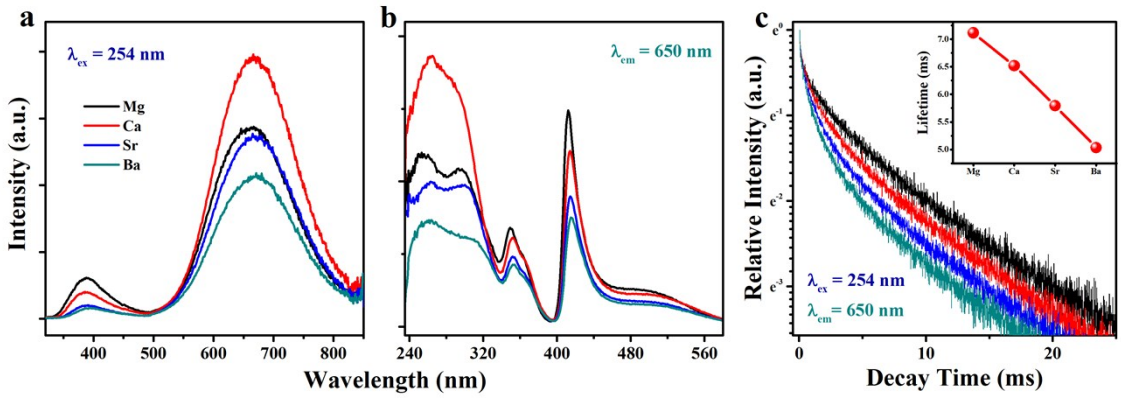

Fig. S5 (a) Emission (λ_{ex} = 254 nm) and (b) excitation (λ_{em} = 650 nm) spectra of the GA*M* (*M* = Mg, Ca, Sr, Ba) samples. (c) Luminescence decay curves for samples GA*M* (λ_{ex} = 254 nm, λ_{em} = 650 nm), the inset shows the dependence of lifetime on different alkaline-earth metals.