

SUPPORTING MATERIALS SECTION

Composition-Structure-Property Correlations in Rare-Earth-Doped Heavy Metal Oxyfluoride Glasses

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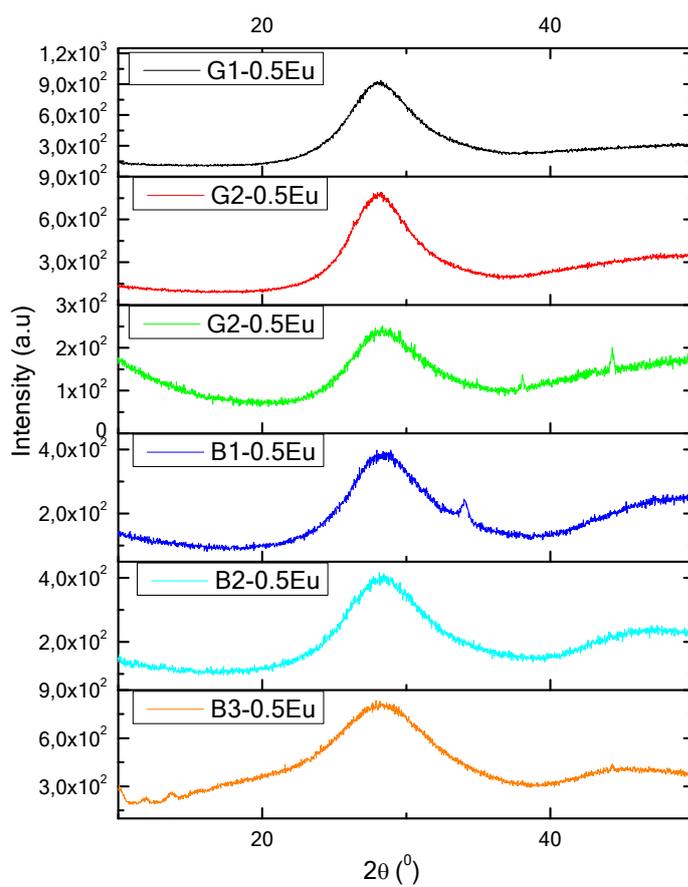


Figure S1: XRD powder patterns of the glasses, documenting the completely vitreous character of the samples studied.

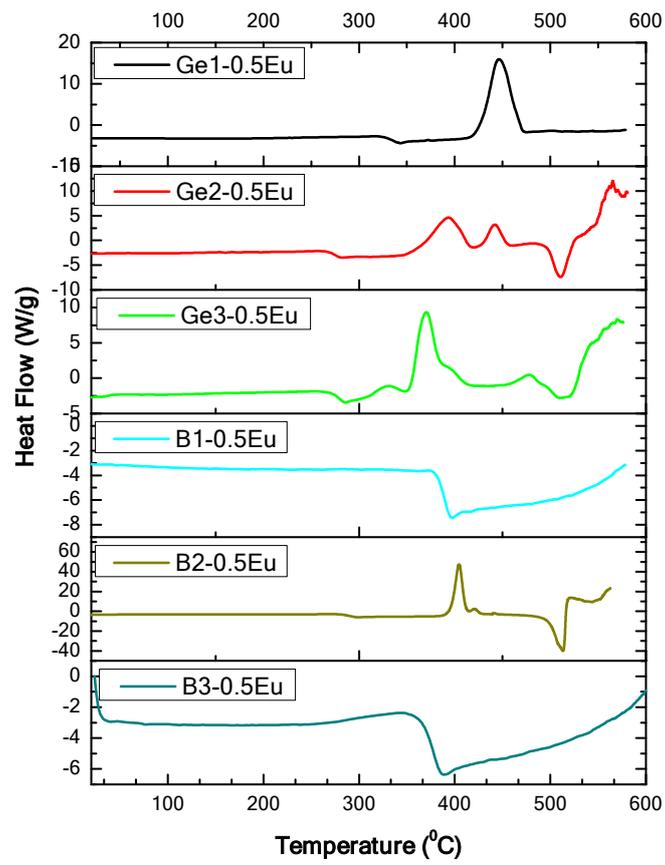


Figure S2. DSC of the borate and germanate glasses of the present study.

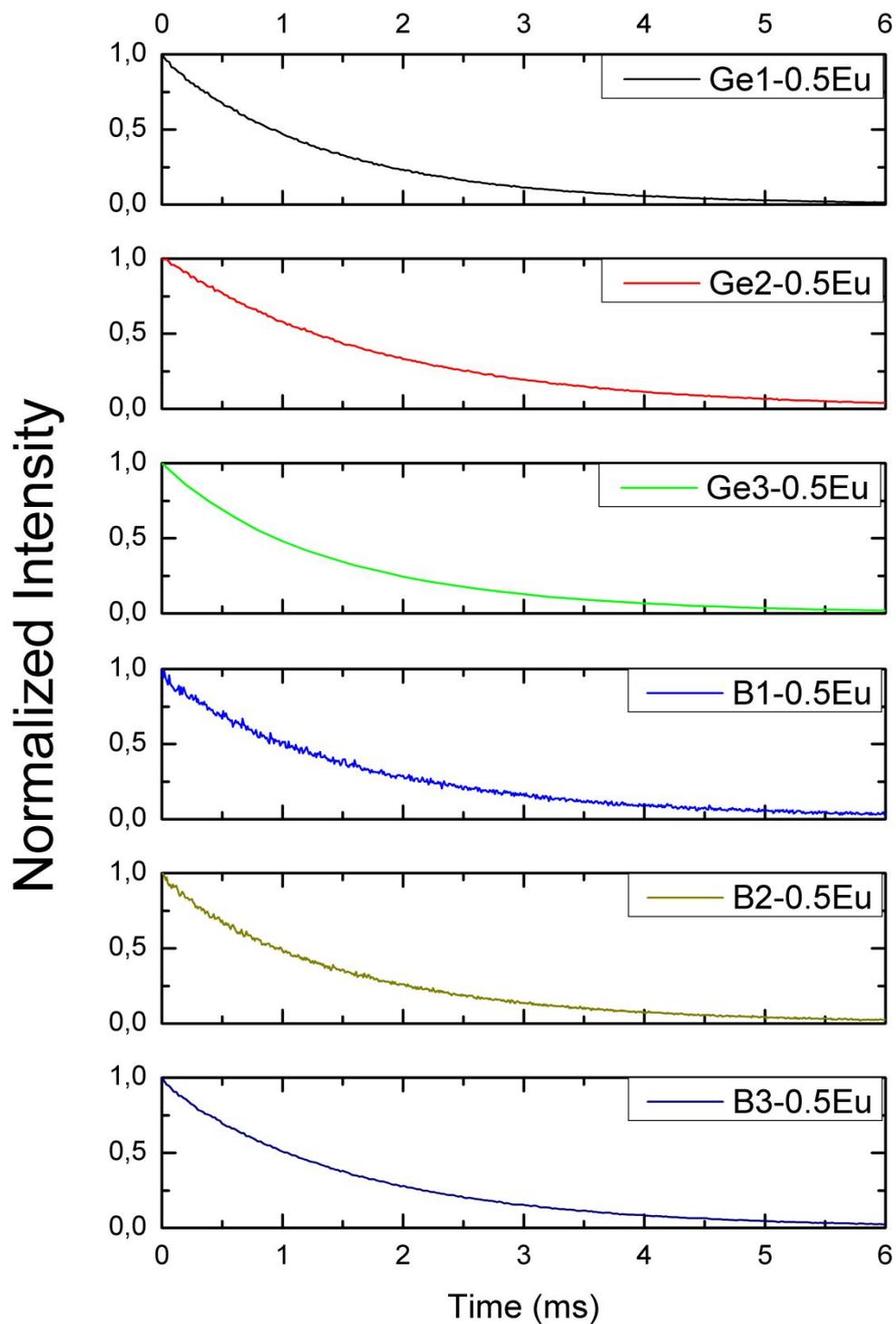


Figure S3a. Fluorescence decay at 611 nm of the glasses under study, containing 0.5 mol% EuF_3

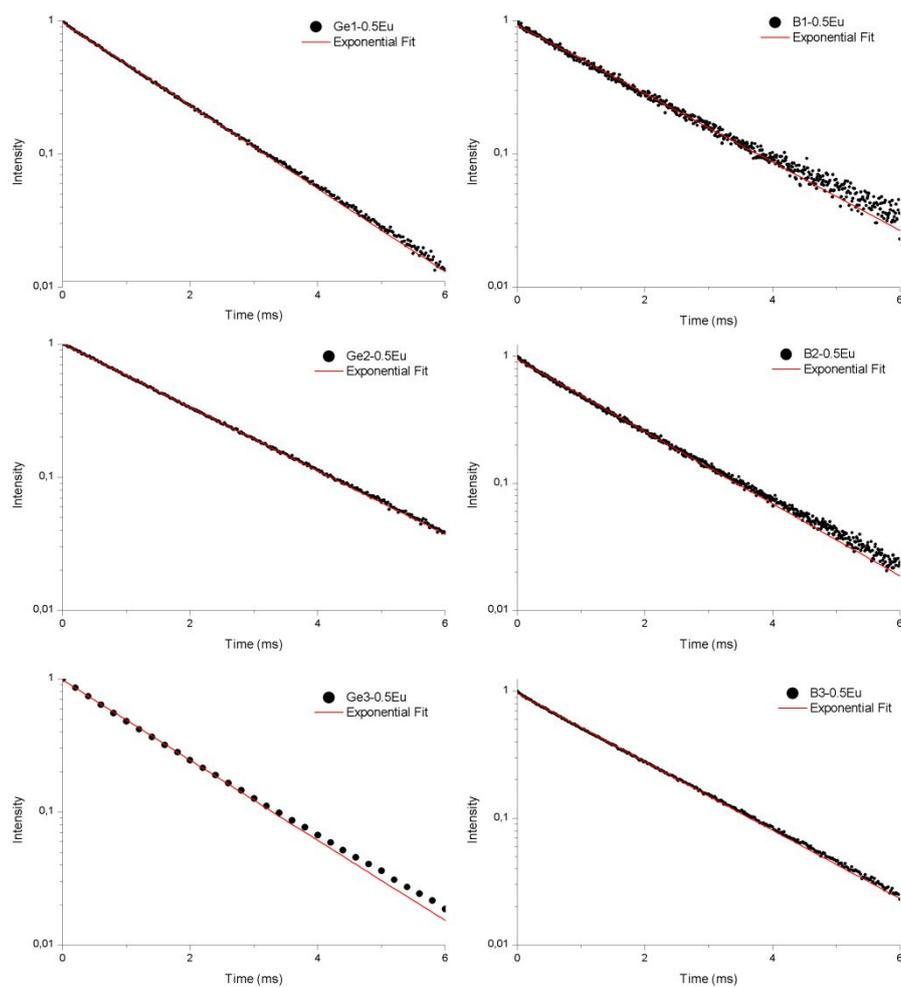


Figure S3b. Excited state life time determination from the fluorescence decay at 611 nm of the glasses under study, containing 0.5 mol% EuF_3

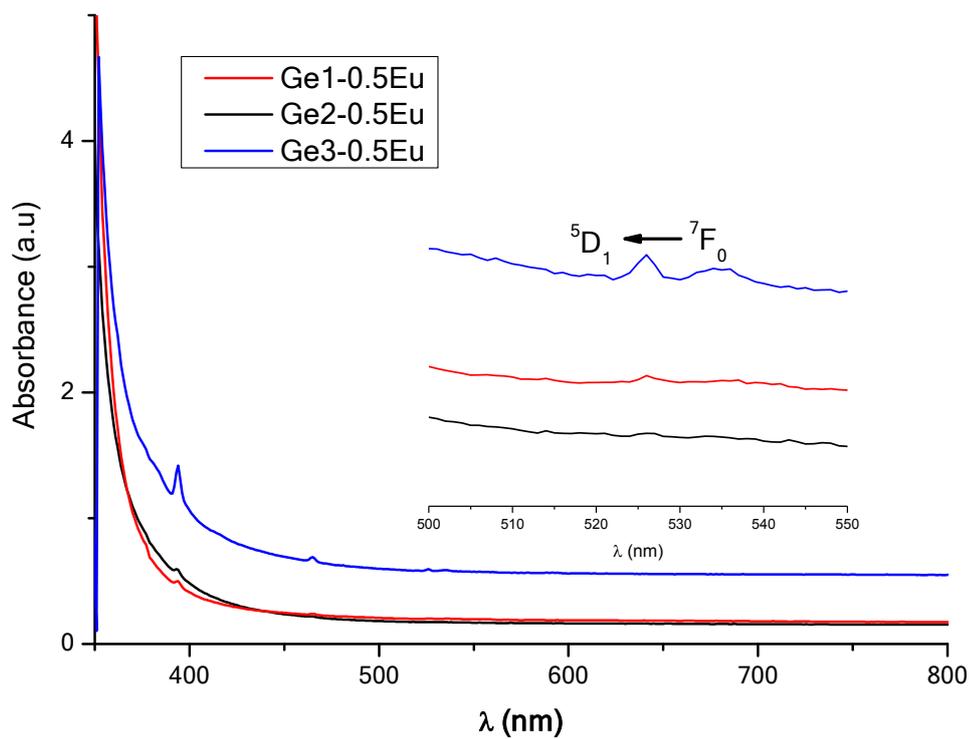


Figure S4a: UV-Vis Absorption spectra of the fluorogermanate glasses under study.

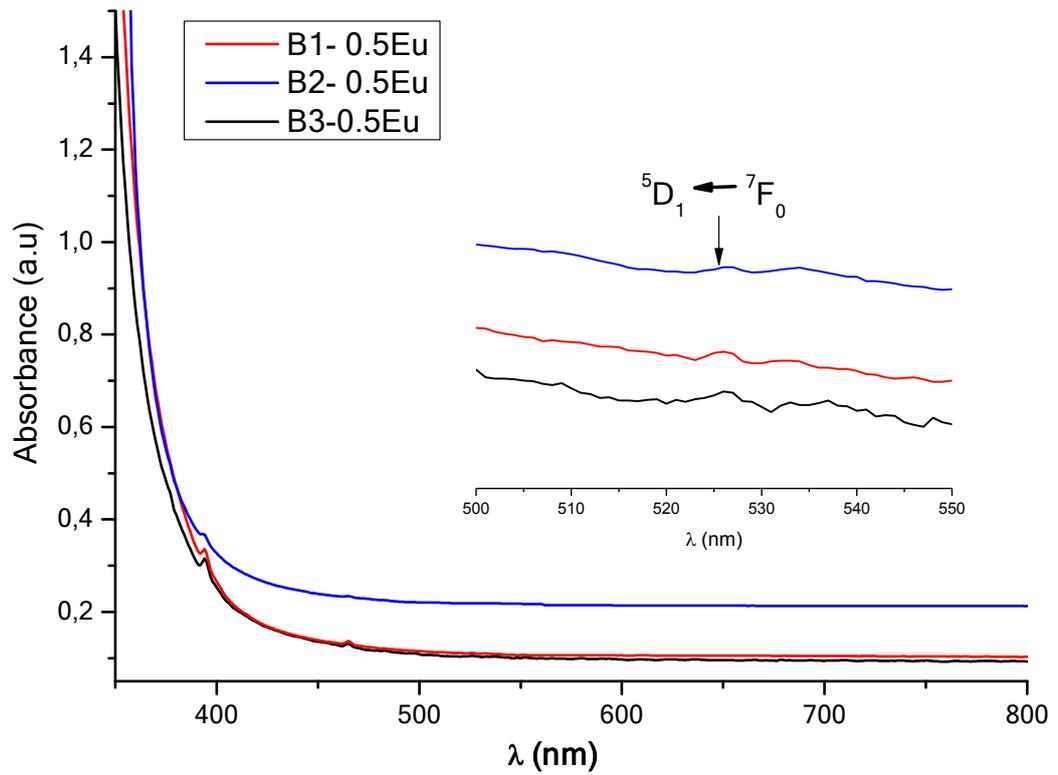


Figure S4b: UV-Vis Absorption spectra of the fluoroborate glasses under study.

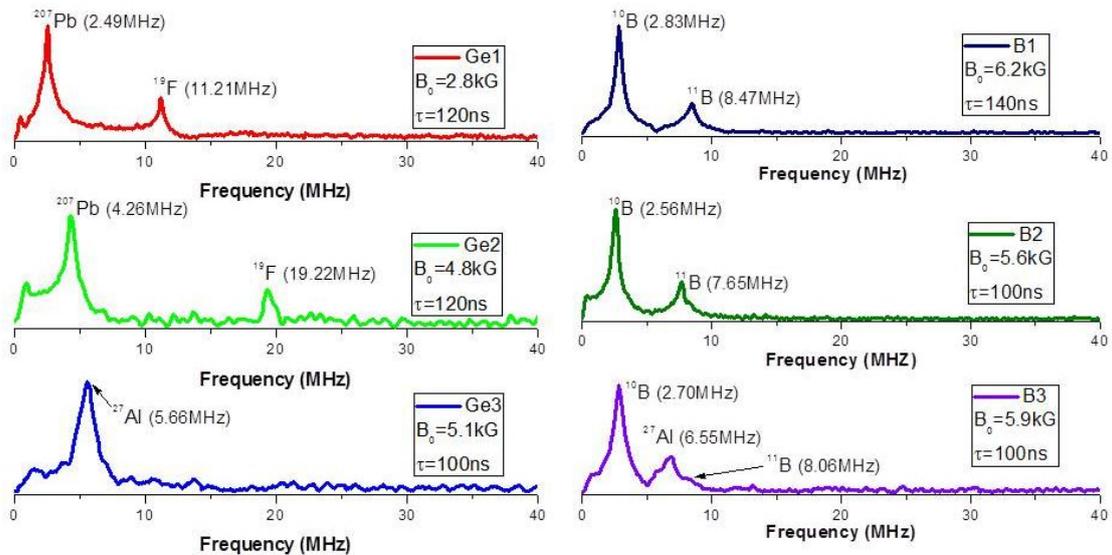


Figure S5 Electron spin echo envelope modulation spectra of the fluorogermanate (left) and fluoroborate (right) glasses under study.

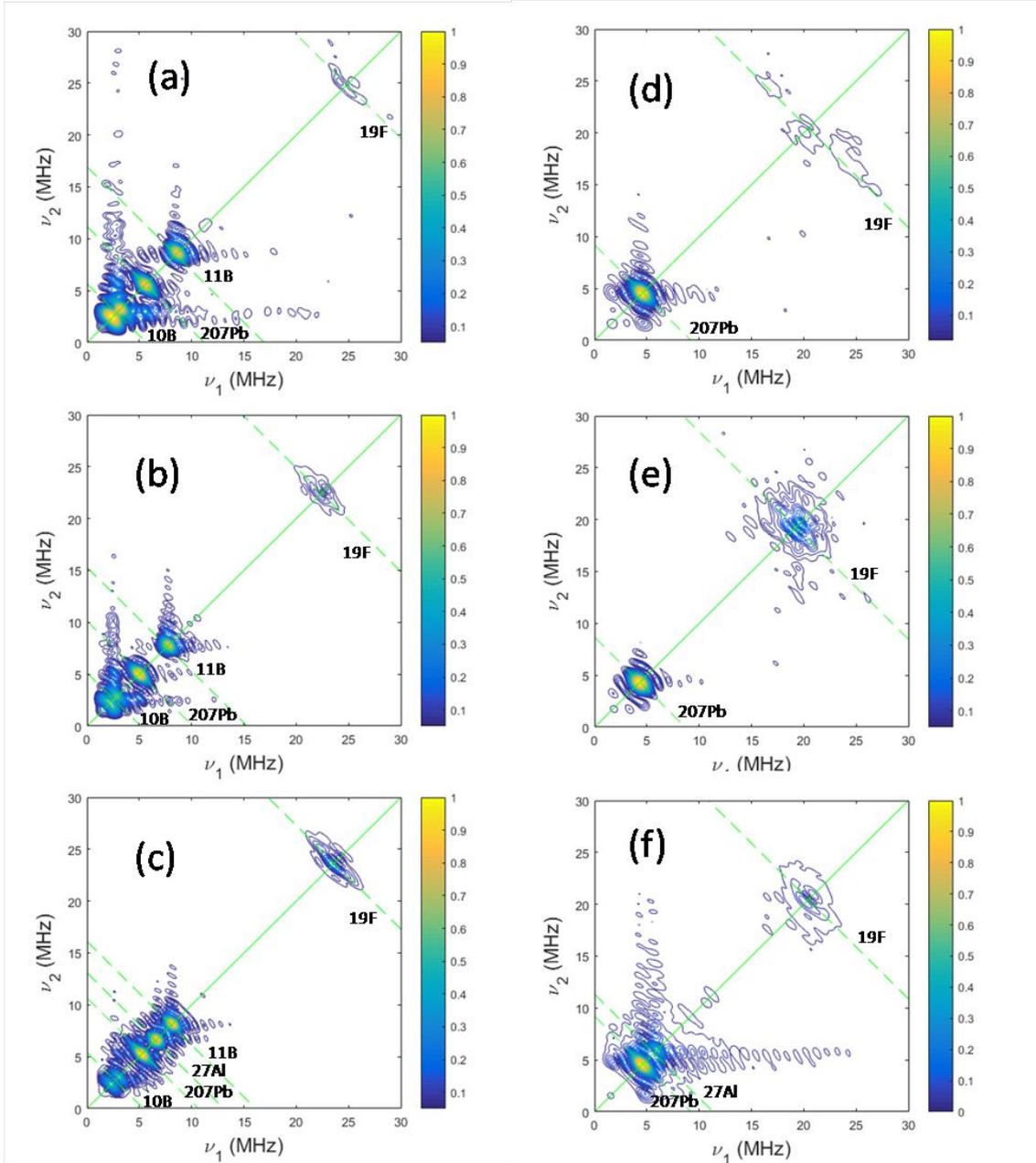


Figure S6: HYSORE spectra at 5K of the fluoroborate and fluorogermanate glasses doped with 0.2 mole% YbF_3 . (a) B1 at magnetic field = 620 mT and $t = 100$ ns, (b) B2 at 560 mT and 108 ns, (c) B3 at 590 mT and 104 ns, (d) Ge1 at 510 mT and 104 ns, (e) Ge2 at 480 mT and 128 ns, (f) Ge3 at 510 mT and 104 ns.

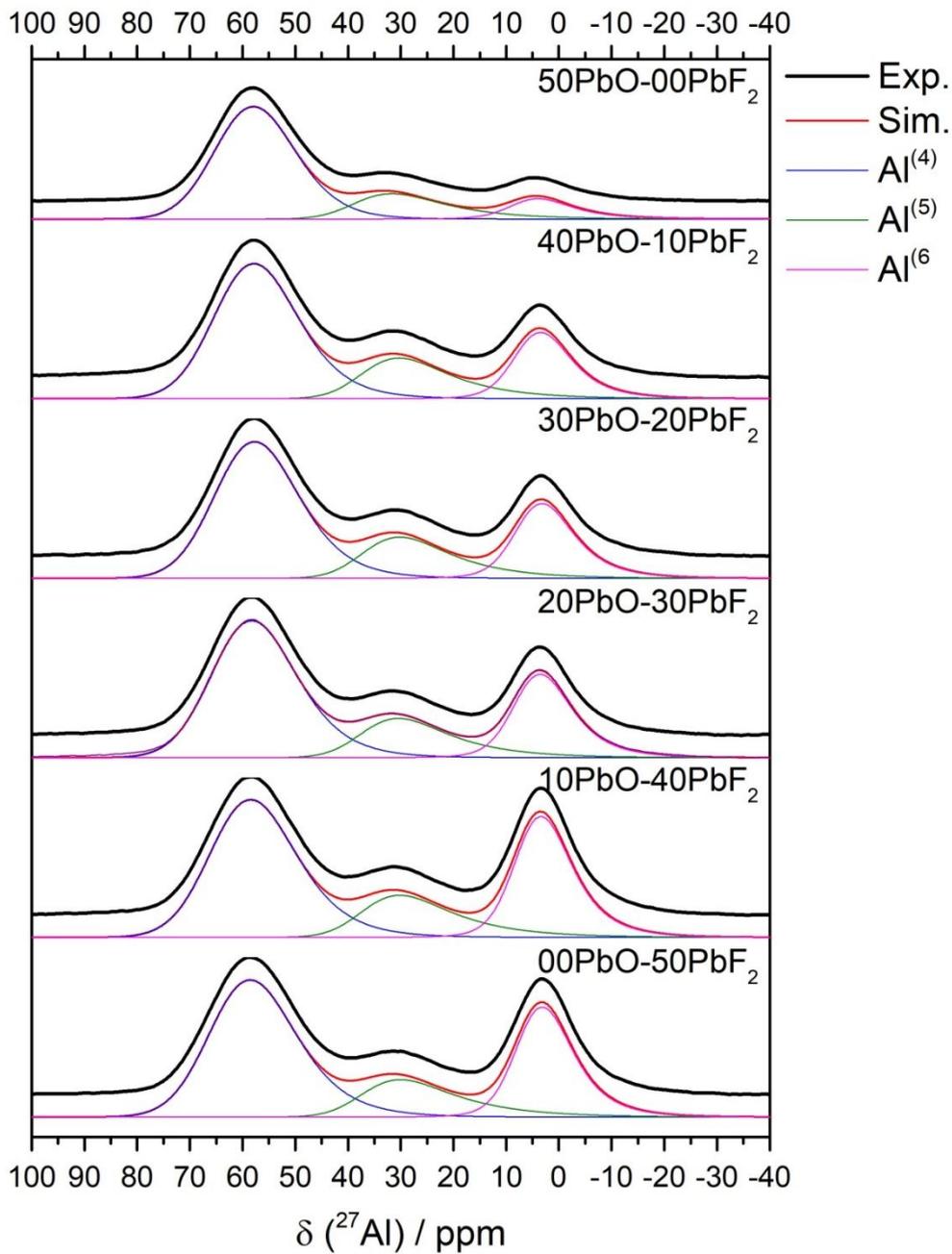


Figure S7: Experimental and simulated ^{27}Al MAS-NMR spectra of glasses in the system $50\text{GeO}_2-(50-w)\text{PbO}-w\text{PbF}_2$. The data reveal that PbF_2 promotes the formation of higher-coordinated Al species, but also indicates the presence of higher-coordinated Al species even in the absence of PbF_2 .