

$\text{Ln}_2\text{GeB}_2\text{O}_8$ (Ln = Nd, Sm-Tb): A Series of Luminescent Lanthanide(III) Borogermanates with a Layered Structure

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Supporting information

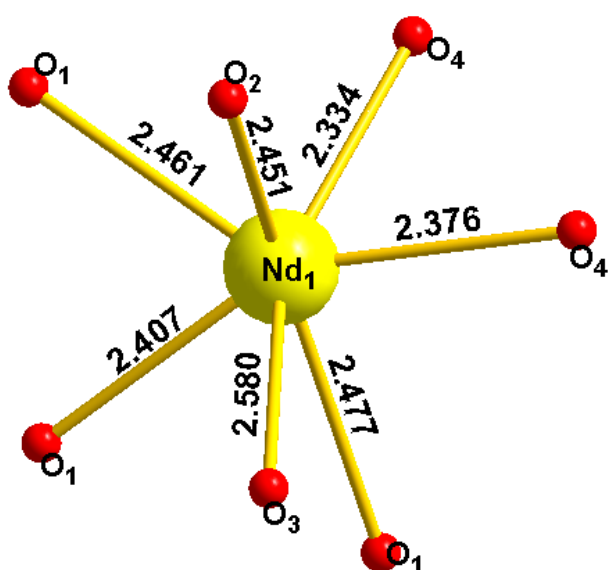
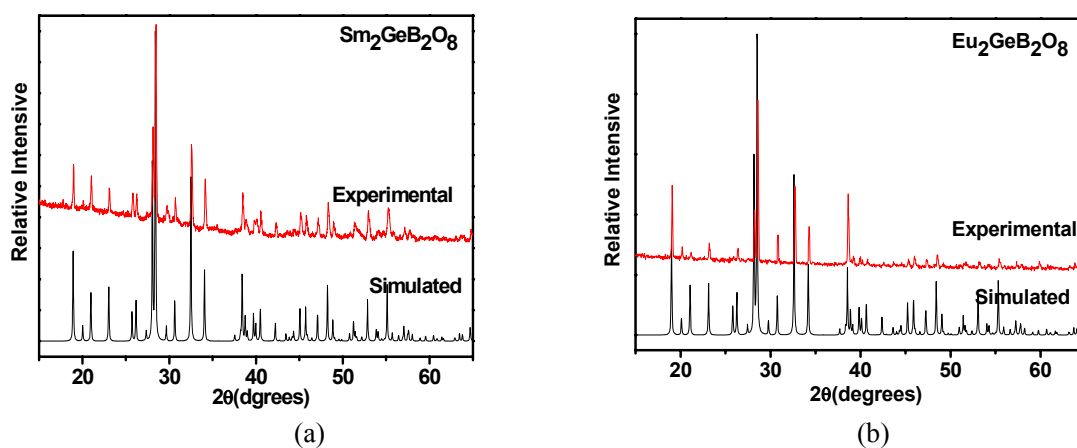


Figure S1. The coordinate environment of Nd(III) ion in $\text{Nd}_2\text{GeB}_2\text{O}_8$.



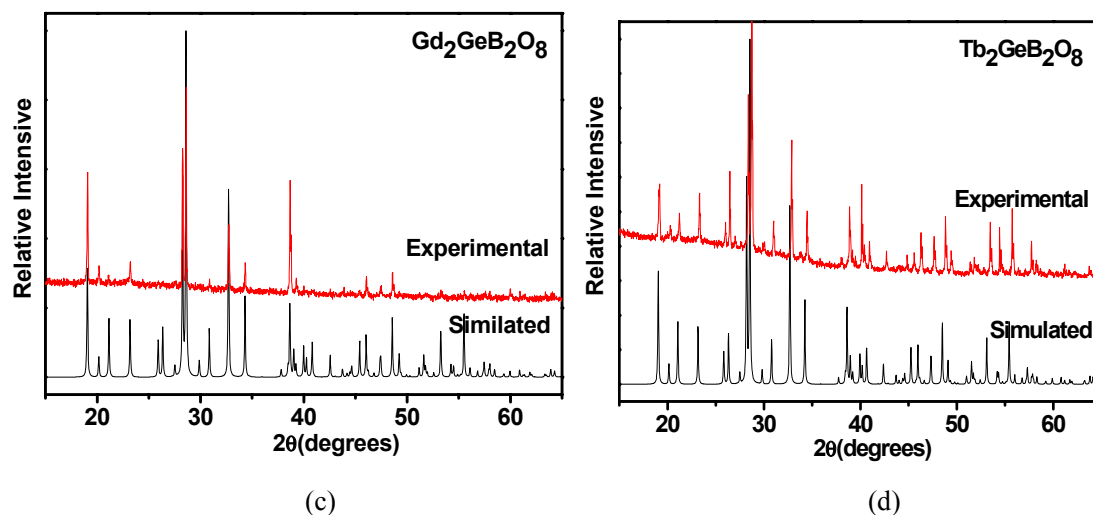


Figure S2. Simulated and experimental X-ray powder diffraction patterns for (a) $\text{Sm}_2\text{GeB}_2\text{O}_8$, (b) $\text{Eu}_2\text{GeB}_2\text{O}_8$, (c) $\text{Gd}_2\text{GeB}_2\text{O}_8$ and (d) $\text{Tb}_2\text{GeB}_2\text{O}_8$.

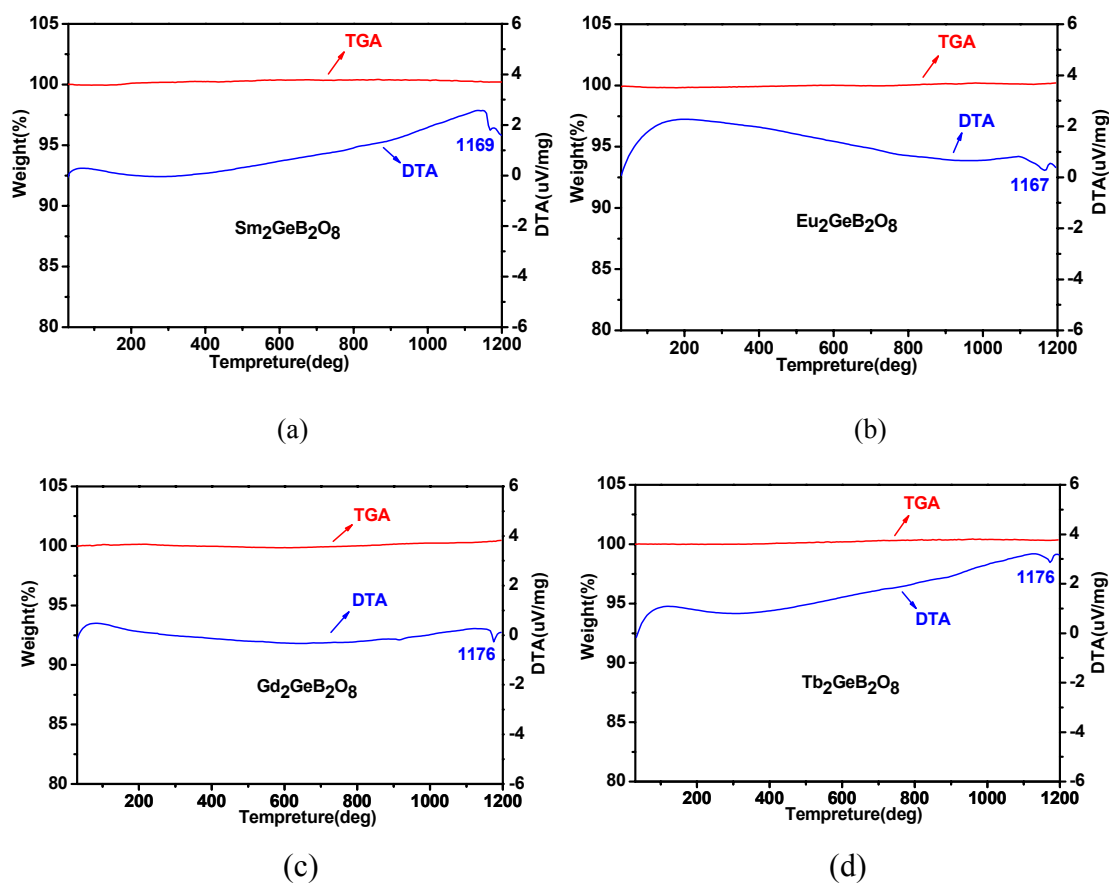


Figure S3. TGA and DTA diagrams for (a) $\text{Nd}_2\text{GeB}_2\text{O}_8$, (b) $\text{Sm}_2\text{GeB}_2\text{O}_8$, (c) $\text{Eu}_2\text{GeB}_2\text{O}_8$ and (d) $\text{Tb}_2\text{GeB}_2\text{O}_8$.

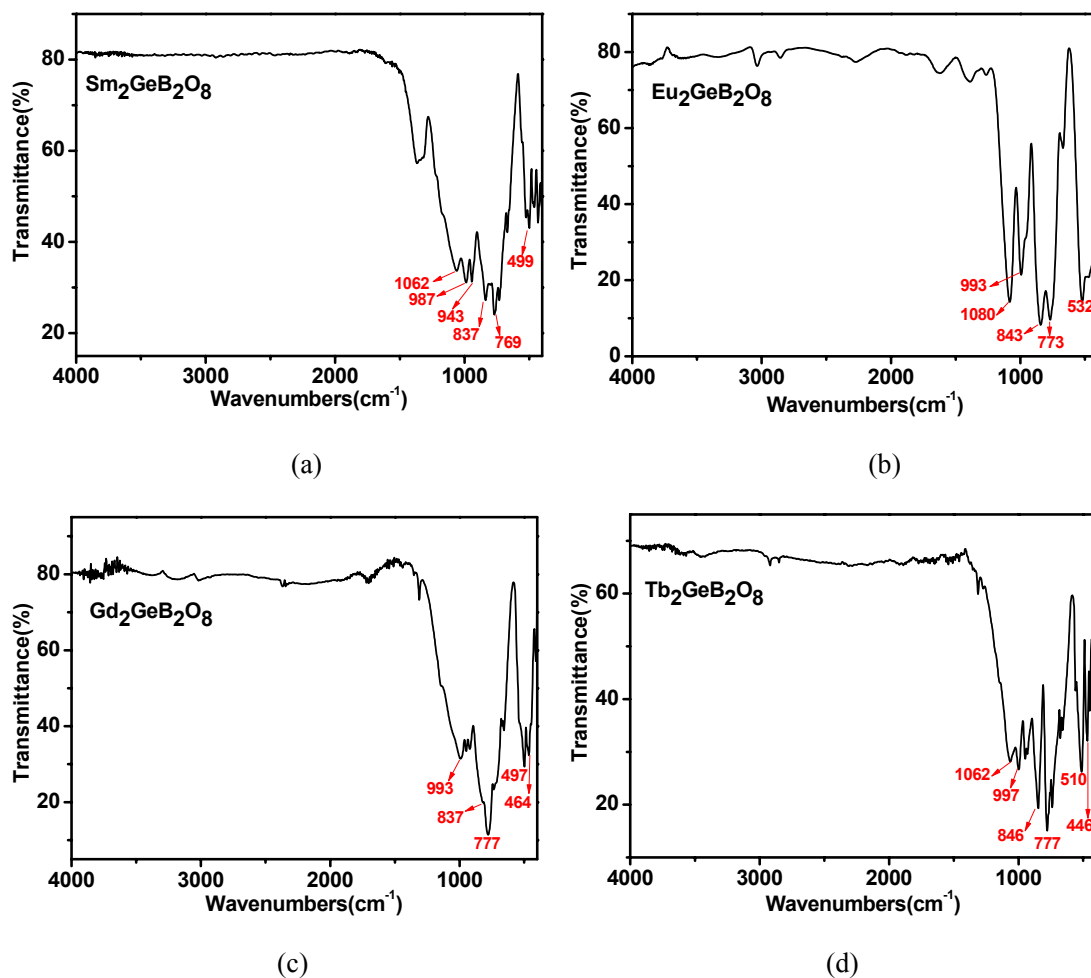
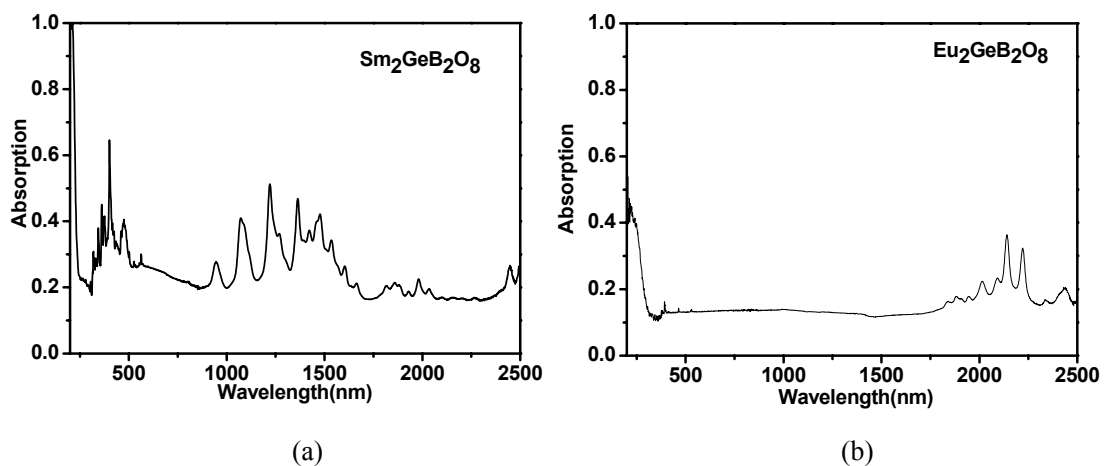


Figure S4. The infrared spectra of (a) $\text{Nd}_2\text{GeB}_2\text{O}_8$, (b) $\text{Sm}_2\text{GeB}_2\text{O}_8$, (c) $\text{Eu}_2\text{GeB}_2\text{O}_8$ and (d) $\text{Tb}_2\text{GeB}_2\text{O}_8$.



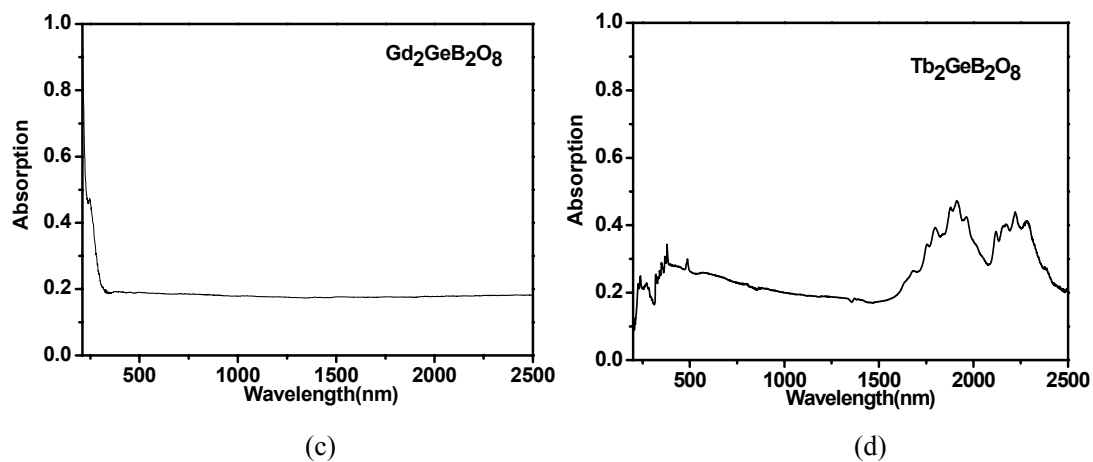


Figure S5. UV absorption spectra of (a) $Nd_2GeB_2O_8$, (b) $Sm_2GeB_2O_8$, (c) $Eu_2GeB_2O_8$ and (d) $Tb_2GeB_2O_8$.

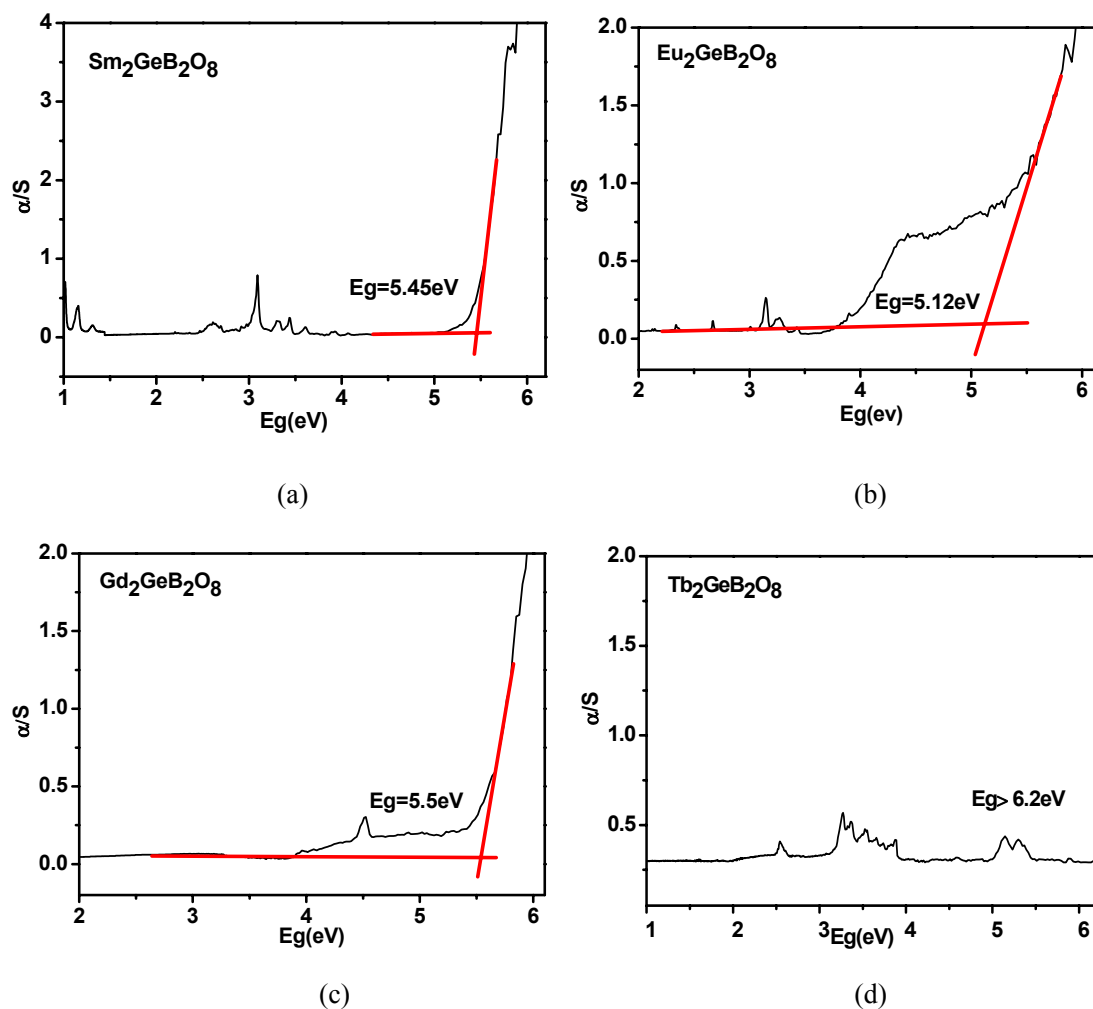


Figure S6. Optical diffuse reflectance spectra for (a) $Sm_2GeB_2O_8$, (b) $Eu_2GeB_2O_8$, (c) $Gd_2GeB_2O_8$ and (d) $Tb_2GeB_2O_8$.

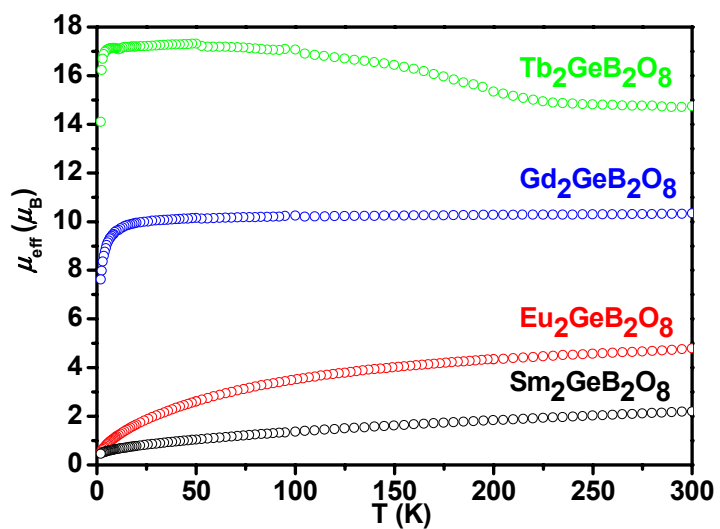


Figure S7. μ_{eff} versus T plots for $\text{Ln}_2\text{GeB}_2\text{O}_8$ (Ln = Sm, Eu, Gd, Tb).